HEALTH HAZARDS AT TNS, INC.

HEARING

BEFORE THE

SUBCOMMITTEE ON
INVESTIGATIONS AND OVERSIGHT

OF THE

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SCIENCE AND TECHNOLOGY
U.S. HOUSE OF REPRESENTATIVES

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HEALTH HAZARDS AT TNS, INC.

TUESDAY, DECEMBER 8, 1981

House of Representatives,
Committee on Science and Technology,
Subcommittee on Investigations and Oversight,
Washington, D.C.

The subcommittee met, pursuant to notice, in room 2322, Rayburn House Office Building, at 10 a.m., Hon. Albert Gore, Jr. (chairman) presiding.

Mr. Gore. The subcommittee will come to order.

Today, we undertake one of the most difficult tasks of congressional oversight: the careful examination of a bitter conflict arising from a scientific argument caused, at least in part, by the application of governmental policy. At first blush, it may appear that the problems at TNS, Inc., formerly Tennessee Nuclear Specialties, are simply those of a classic labor dispute: long simmering unrest among workers under old management, the imposition of new management, and the use of any and all issues by both sides to obtain the best settlement possible. I believe, however, that those of us in Government must take at least some responsibility for the problems at Jonesboro, and I want to use this hearing today as a forum in which to examine what can happen when we permit scientific problems to simmer, when there are research solutions available, and why it is necessary to think long and hard about alternatives to our present system of scientific health and safety regulation before we take too many steps down the road to Federal deregulation of the environment or the workplace.

For many years, our society and this committee have debated the safety of radiation and the use of nuclear materials. In many cases, this debate has centered on the long term, low dose exposure of individuals in occupational settings. The debate has languished, I think, because neither the Department of Energy nor other responsible agencies of Government have done enough good experimental epidemiological work to permit any reasonable conclusions. And in the absence of good science, opinion has prevailed.

In this particular case, both the management of TNS and the employees have chosen to interpret the existing data in a way that is most favorable to each side's interests. In this kind of environment, the human beings involved inevitably will lose. If it is true that the company has intentionally chosen to expose its workers to the maximum tolerable dose of radiation and uranium for long periods of time, then I believe that the company is guilty of, at the least, a lack of prudence in this matter, and at most, a callous disregard of the people on whom it must depend and to whom it owes a safe workplace. It is still unclear what health consequences will result from this situation, but regardless of the final outcome, the problem at TNS highlights the necessity to cut through the confusion surrounding the problems associated with radiation, lest this kind of situation become only the tip of the iceberg.

The problem we are examining today also demonstrates the necessity to have adequate State regulatory capabilities in these occupational and environmental areas, before transferring large portions of Federal authority to the States. In this case, I have serious doubts whether the relevant State regulatory authorities had either the resources or the knowledge to undertake the kind of detailed inspections that would have been necessary to keep the plant from degrading into the unfortunate state that all parties acknowledge to have been the case prior to the purchase of TNS by the Aerojet General Corp. I also believe that more vigilant and active State programs could have pressed Aerojet to make significant improvements before May 1981, when the first visible signs of company concern became evident.

In the course of this investigation, it became obvious that the subcommittee would have to have access to all of the relevant records in order to adequately assess both the nature of the problems at TNS and to evaluate the response of the company. In May 1981, the Aerojet Corp. contracted with Radiation Management Corp. of Lorton, Va., to conduct an independent on-site evaluation of the plant's radiation safety program. Subsequent to that report, Aerojet began to make significant improvements in the plant. Aerojet has made that report available to the subcommittee, and it paints a picture that is seriously critical of the way TNS was operated prior to May 1981. It seems to me that it is important to make this report public for two reasons. First, it independently confirms much of what the subcommittee has found in its own investigation about problems at the plant. Second, it serves as a point of departure against which TNS management can be measured in the future. I commend Aerojet for its decision to undertake this unvarnished review, albeit at a rather late date. It remains to be seen whether the report will help the workers who have already been exposed, and who are now out of work because of their willingness to lay down the gauntlet. The contents of the report make it easy to understand why the corporation has been unwilling to release it in the past, but I firmly believe that a fair evaluation of the situation requires the airing of all relevant evidence.

The Aerojet General Corp. has, from all reports, an excellent reputation for producing products and weapons that are effective, on-schedule, and within the cost estimates that have been established. In its pursuit of excellence in national defense, neither Aerojet nor any other corporation has the right to endanger the health of the citizens who work for it. I'm confident that the hearing today will enable all sides to explain their view of this complicated issue, and that the public and the company will emerge with a better view of what needs to be done to solve the practical problems at TNS, as well as the more general scientific and regulatory problems that underlie this dispute.

I'd like to recognize now the ranking minority member, Mr. Walker.

Mr. **WALKER**. Thank you, Mr. Chairman.

Mr. Chairman, while I fully support the purpose of this hearing, our investigation into the safety of workers in nuclear facilities, I am deeply concerned with the possible ramifications of the action of this subcommittee yesterday in voting to make public an internal document of the company.

It is a fundamental point in our democracy that we all are governed by the rule of law. We must each operate under those rules and procedures which have been established to insure that each side in a dispute will get a fair and equitable hearing. And once a dispute has come to issue in an adjudicatory process, there should be no outside intervention.

It is my understanding that the document which this subcommittee voted to disclose yesterday contains information which is essential to issues now before the National Labor Relations Board in a case filed by the union at TNS. It is also my understanding that they have attempted to gain access to this document at least twice already through established legal procedures, and that both times they were denied the document. It is fundamental to the legal process that the plaintiff in an action such as the one initiated by the union must present sufficient proof to prove his case. I believe that it is clearly improper for this subcommittee to demand documents from litigants whose case is already at issue under threat of congressional subpena, and then release them publicly to the obvious benefit of the other side, which could not get them through the proper legal motions.

It is a well established legal principle that it is public policy and obvious public benefit that a prospective defendant should be encouraged to undertake corrective action to reduce a public hazard without fear that his actions will be entered as proof against him of his possible wrongdoing. The purpose of such policy is to encourage actions which will safeguard human life and well-being. This does not bar a plaintiff from introducing independent evidence of negligence to prove his case.

But what we are doing here today is placing every businessman in America on notice that if he is threatened with a suit based upon an unsafe workplace that he dare not take corrective action; he dare not call in experts to advise him on potential dangers; he dare not call in engineers to assess problem areas; and also, he dare not have those engineers design corrective measures to reduce potential hazards, because if he does any of those things, some committee, like this one, of Congress may come along and demand his records and make them a part of the public record to be used against the business at every opportunity by the workers, the very people these corrective measures are designed to protect.

Mr. Chairman, our hearing today deeply concerns me, in that I want to be assured as to what our purpose truly is. Are we here to assess the scientific question of whether workers in a nuclear workplace are adequately protected today, and whether Federal regulations are properly drafted to insure future protection? Or, are we here to assess blame for possible past actions? Our first amendment duties are broad indeed, but this hearing room should never supplant a proper legal hearing.

Finally, Mr. Chairman, I want to point out that one of the real problems we face today is that radiation is particularly insidious as a threat to the average worker, since it cannot be seen, or felt, or tasted, or even smelled. It is often difficult to appreciate that something you cannot sense other than through clicks on a geiger counter or changes in a thermoluminescent dosimeter can threaten your health for decades to come.

There are thousands of workers exposed to potential radiation hazards each day in America, and I do want to commend the Oil, Chemical and Atomic Workers Union for their constant attention to the well-being of their members. Their vigilance has done much to improve the working conditions of their membership over the years. On the other hand, many employers in this field have also been exceptionally cautious in protecting their employees. It is my information that the Aerojet Ordnance Co. has an outstanding reputation in the industry for concern for the safety of their workers.

Instead of looking for where to place some blame, we should focus on ways in which the Federal Government can make it possible for labor, management and State health agencies to work cooperatively to best protect the individual in the workplace.

Mr. **Gore**. Thank you very much.

Mr. Shamansky?

Mr. **Shamansky**. Thank you, Mr. Chairman.

I have just returned from a trip to Vienna, where I met with officials of the International Atomic Energy Agency, and the purpose of my visit was to inquire into the so-called safeguards and the inspections made by that agency. The reason I stress so-called safeguards and inspection is because a majority of the people in this country gain their information from television, and when you spend just a few seconds on television talking about that, the average American using English as we understand it thinks a safeguard is really safe and an inspection is an inspection, and my point here is that we are going to have to review and tell the American public what is going on with these things in reality. And I feel, based on the headlines that were produced during the time I was away with the chairman of the Nuclear Regulatory Commission, who now states that there are real problems with nuclear safety, this seems to me the hearing we are conducting today is part of our charge to inform the American public as to what safety is with respect to workers, and I think you are performing a very useful service in informing the public as to what the facts are. The conclusions can be drawn after that, but certainly, unless we get the facts out, we cannot hide behind—and I say this as a lawyer—we cannot hide behind certain formalities and permit the law to subvert the charge of this committee.

Thank you, Mr. Chairman.

Mr. **Gore**. Thank you very much.

The internal company document which was referred to we will release prior to the appearance of the company representative.

At this point, we would like to call the first panel to the witness stand, representing the employee's point of view: Vincent Mango of Jonesboro, Ten., and John Bettis of Jonesboro, Tenn., accompanied by Dr. Mark Nelson, a doctor retained by the Oil, Chemical, and Atomic Workers Union.

If the three of you would remain standing and raise your right hands, I take it you have no objection to being sworn.

Do you swear the testimony you're about to give will be the truth, the whole truth and nothing but the truth, so help you, God?

Mr. **MANGO**. I do.

Dr. **NELSON**. I do.

Mr. **BETTIS**. I do.

Mr. **GORE**. Thank you very much.

Mr. Mango, we'd like to start with you, if you could push the microphone over that way. Welcome.

STATEMENT OF VINCENT MANGO

Mr. **MANGO**. Thank you for being here.

I was employed at TNS for 1 year and 1 month. I was employed and I started out as Maintenance B on a shift by myself for—well, I went through a probation period of 30 days on day shift, then I went to second shift by myself and I did the same job that five people did on day shift. I worked with all chemicals which the plant used in their production, which were UF6, UF4, magnesium, acetone, perchloroethylene, titanium, nitric acid, KOH, propane, argon, uranium oxide, dolomite, gasoline, kerosene, diesel fuel and thorium. Thorium I was in last, because they were running the last part of the thorium when I got there.

To protect me from all of these elements, they gave me a pair of coveralls, safety glasses, safety shoes, and a pair of leather gloves. They never told me to wear a respirator, never the whole time I was there doing any type of production. They said it was up to my foreman when I was to wear a respirator, and for 4 months when I was there I never had my own personal respirator.

When I started working, the company sent me to a company doctor and they found me to be in good health. I had no back problems at that time; at this time, I do have these problems.

I received two lung scans at the time I was at TNS. They took about 20 minutes each. This was for uranium. Thorium took a little longer. I didn't work in the thorium that long. Uranium samples through our urine were taken on Mondays or Tuesdays, depending on your shift, and this was every 2 weeks, but it should have been taken on a Friday to measure the exact dose of uranium that your body had been exposed to, instead of on a Monday, after you've had a 2-day period for your body to release some of this uranium, so they were not actually taking what your body had been exposed to. They were giving a 2-day period for it to remove itself from your body. After you gave these samples, you took them to the health and safety department.

Also, they gave me a TLD badge, kept in the guard shack. This is a little badge with a little crystal in it that's supposed to measure the whole body for skin dosage.

I was notified one time I had a high count. That was 1950 through my urine. When I asked the company what they were going to do about this high uranium count, they told me there's nothing they can do. Jim Barlow, the company health doctor for uranium, or radiation protection officer—that's what I should say—told me to drink beer. He said that by drinking beer, it would flush it out of my kidneys. He said he wished it could be put in company policy that everybody would be required to drink beer, but they had it in company policy if you came in drinking or drunk, they'd fire you.

I did not receive any records on my whole skin dosage for every 2 weeks when they did take this badge up. They just sent me an average statement of what I had gained for a year, but they didn't say how I got that. They just gave a figure. I don't know how they came up with that, or whether it was just made up or what.

Before I started working at TNS, personnel department told me it was a safe place to work. They didn't even explain or give me any brochures or any written material prior to my start of work on each type of chemicals, so I treated it like it was dirt. That's how the company used it. The type of protection they gave us beforehand, they just acted like it was nothing, that you could eat all you could of it and it wouldn't even bother you.

At one time on my first day of work, after I went into the change room, I had changed into my clothes, and they had a piece of tape on the floor that was supposed to make the difference between the clean and the hot side, so the dust or the radioactive material could cross this tape with no problem. I mean, you carried it on your socks, you had it on you, you had it in you, you breathed it, and there's nobody who can tell me that this stuff can't hurt you when you blow it out through your nose and cough it out of your throat, and this is even during weekends.

And during my first day there at work, I was back in the production area smoking. I didn't know better, because they hadn't told me about it. There were no no-smoking signs. There was nothing. So an employee came up to me who's been there for a while and said, "They're going to fire you if they catch you back here smoking," so I said, "Well, they didn't even tell me about this." So I had to learn that through the employees there.

I had no on-the-job instruction of health and safety, that this was healthy or this was unsafe or anything like this. It was just, "Go out there and get it, do your work, get it done quickly, and just stay busy." They wanted production. In my opinion, production came over human life.

And the supervision I had on the machinery there, it wasn't through a supervisor; it was through other maintenance men who've already learned the equipment.

That's about all I have right now that I can think of.

Mr. **Gore**. Great. Thanks. We'll have some questions when the other members of the panel get through.

Mr. **Mango**. OK, that sounds good.

Mr. **Gore**. Mr. John Bettis, welcome to you. Please proceed.

STATEMENT OF JOHN BETTIS

Mr. **Bettis**. Thank you. I'm glad to be here.

Well, I was hired around April 11, 1979. Before I was hired, my wife and I both called Jack Silcox. Back at that time, he was personnel manager.

Mr. **Gore**. Move that microphone a bit closer to your mouth there. OK, go ahead.

Mr. **Bettis**. Back at that time, Jack Silcox was the personnel manager. We were concerned about our future. We wanted to have children. We've heard all kinds of rumors that it could harm us. We heard it could cause cancer. We heard it could cause you even to go sterile. You know, people were telling her stuff where she worked; they were telling me stuff.

She called Jack Silcox. He said there wasn't anything to worry about, said there wasn't anything back in that plant that could harm anybody. He said, "I've got some kids, and there's nothing wrong with them." She called him approximately three times, as well as I can remember. I called him. I said, "Jack, are you sure there's nothing in that plant that could hurt me?" He said, "I'm sure." He said, "I've got children. There's nothing wrong with them and nothing wrong with me." He said, "There's nothing back there to hurt you."

Well, he called me a little while after that and I went down to the plant and the foreman took me around. To give you an example of what he did, we went back in the plant and he'd say, "This is where they break out derbies." You know, he didn't tell me anything—Jack Silcox told me it wouldn't hurt me, but he didn't tell me anything about what was in there, whether that slag could hurt me, the dust from it could hurt me, the black oxide, he didn't say anything about that could hurt me. Jack told me it wouldn't hurt me, so—but he didn't elaborate on it. He didn't tell me anything, either. "This is the 6–4 unit. Well, over here is where we pack the pots. Here is the acid tank." They dip those derbies down in there and they get that slag off. It eats the slag off them. There's fumes coming off that acid tank and it burned my nose, and I looked at him real funny, but he didn't say anything.

When I went back up front, they decided they wanted to hire me, but I had a funny look on my face. I wasn't really convinced, and then again I had to take the man at his word. He said there wasn't anything back there to hurt him, and he did have children, and as far as I know, there wasn't anything wrong with them, so I took him at his word and my wife took him at his word.

I started out as an operator, and I went until approximately November, I believe it was, and I became a lathe operator turning down those billets over there. When they were out of round a little, we'd try to smooth them up, cut holes, little pitholes, out of them, this type of thing, chamfer the nose of them.

I was on there about a month or so, and in January, as well as I remember, I became a maintenance man, and I've been a maintenance man since. I started out a maintenance B, then in January of the following year I became maintenance A. I, like Mr. Mango, worked the back shift by myself. And we told the company that we didn't feel like that was fair that one maintenance would have to do what all the rest of them did on day shift. You know, they had a lot more than we did, and we worked all the whole—even the penetrator shop, the billet shop, and the small derby shop by ourselves, and any maintenance man on back shift had to do that. He had to carry the load himself.

Like he said, we had glasses, we had shoes, we had coveralls, and had a little TLD badge. Not everybody had those little old tubes—those limiters, I believe they called them—not everybody had them. I didn't have one. I never have had one.

The respirators—in my opinion, those respirators are a joke, because when I wore the respirator, the only time I wore them, as I can remember, is when I'd clean the dust collectors, change the filters, and that wasn't but very seldom, by the way. I got on them over there and I said, "Those dust collectors are stopped up." I'd go up and hit them and black oxide would fall down on my arm and on the floor. I said, "I'm maintenance man." I got on the foreman, and I said, "Why don't you check?" "Oh," he said, "we've got to get this machine going, got to do this, got to do that. Get over there and get that done. We're not worried about that right now." That's the answers I got. And I said, "Man, that's not right." I said, "How can that thing do its job?" They had little old gages on the side of them and had one up here (indicating), and one down here (indicating), and it's supposed to tell you, as well as I—they told me this is what it's supposed to tell you, is when to change those filters. Well, half of them weren't even working. Those little plastic tubes are pulled off them, and the ones that did work were plumb over, plumb over to 10, as far as it would go. I said, "Now, that ain't right." I said, "We've got to change them."

Well, I fussed so much, they'd have me to change them then, and when I changed them, like I said, I had my respirator on and I'd have that black oxide all over me. When I got done, I'd have it all over me. It would be in my ears. And when I'd go to that change room and take my respirator off when I got done, there'd be black stuff right under here (indicating), right around where my nose goes. I'm telling you the truth. I'm telling you like it is.

And I went and told Jim Barlow, and he laughed. He said——

Mr. GORE. Who is Jim Barlow?

Mr. BETTIS. He's the health and safety man.

Mr. GORE. All right.

Mr. BETTIS. He said, "If you don't like—if you're so worried about this place here and worried that it's going to cause you to have bad health, why don't you go hunt another job?" I said, "I'm getting too old. I'm an older person." And he just laughed.

Well, I went up there and told some of the people up front. They laughed. They said, "There's nothing back there to hurt you. If you're worried about it, why don't you hunt another job?" I said, "No, I'm not going to hunt another job. "I'm going to fight for what I believe in right here."

And that was a continuous thing. I had safety meetings. I'd go around once a month. I was the chairman of the Health and Safety Committee for the union. There were two from the company and two for the union, and we'd go around once a month. OK, I'd tell them about these things. They would send the reports back out. Well, to give you an example, say I had a bunch of stuff that I wrote, me and my guy that went around with me, it didn't come out on the reports a lot of times, and I said, "Why didn't it come out?" "Oh, there's nothing wrong with that. There's nothing wrong with that. That ain't unsafe." I said, "Well, in my opinion, it is. Why don't our word mean anything to you?"

Even on the last reports they wrote, if you've got those reports, they even said, "Attached to this is Mr. Bettis' notes." Well, my stuff is more than notes. It's things that we felt was unsafe in that plant. Why isn't that part of that company inspected? They just wanted to put what they wanted to put down.

And repeatedly they let things go. They just ignored it, you know. To give you an example, it would be on this report. Well, they'd go down there about 3 months after that and it wouldn't be corrected, but they'd take it off of their report. They'd just take it off. And I said, "Why did you take that off? That ain't corrected yet." "Well, that's all right." I said, "It's not." Well, they'd put it back on then, you know, and so on the last, I told them, "Listen, you have repeatedly took stuff off, added it back on, just ignored us. I'm giving you a list typed up this time." And I warned them ahead of time. I said, "I'll give them a chance." They holler that I didn't give the State OSHA or anything—notified them. I was trying to be a gentleman about it and give that company a chance. They told me, said, "Just be patient with us. It costs a lot of money to get this stuff to clean the plant up, machinery and stuff, you know, dust collector, good, big dust collector that would take it out of there. Be patient with us." I said, "OK, I will." I was trying to be nice about it, and then they throw this in my face, and I don't feel like that's right. I was trying to be a gentleman about it. I wasn't trying to be a hard-core person. I was being fair with the company, even though I felt like they had money then to do it.

They said, "Well, we've not got it in our budget." Well, in my opinion, if they've got budget to pollute people and fight these people and spend money for lawyers to try to bust this union, they've got money to clean that plant up. That's just how I feel, and I can't help from feeling that way.

Like I said, I was a maintenance man in the plant, and many a time I've gone around—they'd have what they called safety rules. You'd go in there and it would be in an area, a lot of times out in the production area and the machines would be running and you couldn't hear a thing they were saying, but yet you'd have to sign a paper saying that you were at that meeting and stuff, that you understood all that, and you couldn't even hear. I can't hear real well. Since I've been in that plant, I can't hear well, it's so noisy. I think even the State, if I'm not mistaken, got them for noise level.

But another example: You go in there and you go to the meeting, and then all of a sudden, "Mr. Bettis. Mr. Bettis, something over here is the matter." You know, I'd have to go fix it. I'm the maintenance man. I wouldn't get to attend all of that meeting, but when I came back my name had to go on that paper, and it's on a lot of papers there, and the Lord be my witness, I don't know—I couldn't tell you a lot of things right now that—what I'm supposed to do or how I'm supposed to do it.

Now, I do remember one where they talk about green salt. They said, "Rope it off." That's one thing I remember, they said, "Rope it off and clean it up." Did they practice this? No. When the people say, "Oh, here, we spilled green salt. Let's rope it off," the foreman would come over there and get on that person and say, "We ain't got time to fool with that. Let that go." Well, here they are, had a rule that we're supposed to abide by and when we abide by that rule, they say, "Oh, let that go. Get those pots packed." That's an example. Now, they'd say other things. "Get those pots packed. We'll clean that up after the shift is over with. We'll clean that up."

Mr. Gore. Now, when you talk about green salt, for the record, you're talking about uranium tetrafluoride?

Mr. Bettis. That's UF-6. I mean, UF-4.

Mr. Gore. Yes. All right, go ahead.

Mr. Bettis. It's goes from 6 to 4. We used to run the green salt unit, and we changed it from UF-6 to UF-4.

Mr. Gore. OK, I understand. I just wanted to clarify it for the record. Go ahead.

Mr. Bettis. Yes, and they'd have magnesium, and that's what made the derbies.

Mr. Gore. Right.

Mr. Bettis. You mix magnesium in it, you know.

Mr. Gore. Right.

Mr. Bettis. And that blender back there would turn around and around and around; the first one that we had. The other one was a big truck hub, and that green salt would fly out there. It would fly out there in the floor. I've never seen the beat in my life. And the hoses they're supposed to have to suck it out, they'd have big old holes in them.

That plant used more duct tape. I've never seen the beat in my life of duct tape in that plant. Rather than correct something in that plant and do preventive maintenance on it, they'd rather keep it going, pollute us, and fix it later. In other words, when it was so broke down it wouldn't go no further and make nothing, then that's when they'd try to fix it.

Mr. Gore. By duct tape, you're talking about some kind of masking tape to cover leaks in the ducts that——

Mr. Bettis. Yes; it's that gray-looking stuff.

Mr. Gore. It is supposed to be part of the ventilation system?

Mr. Bettis. Yes, you know, like in the air conditioning and stuff, that duct tape?

Mr. Gore. Right. Go ahead.

Mr. Bettis. Yes, that's what they use down there. It's got a lot of that stuff down there, and I've seen many and many a time dust, smoke, you wouldn't believe it. The pots for the blowouts, you had your UF-6 and the magnesium mixed and you put it in there and heat it up to approximately 1,000 degrees. Well, over at the small derby shop—that's where I first started working—I was outside one day, and I heard a big old explosion. Prrrrr [phonetic]. It sounded like a bomb. I went to questioning around and went back in the place. Smoke was everywhere. Now, that pot's got a lid on it, approximately—I'd guess the best I could; you know, I didn't measure it because I'm just trying to go from memory—it's approximately a half-inch thick steel lid. Well, under that it's got the graphite and then down in that is your graphite liner and you've got your green salt. It's got eight bolts, as well as I can remember, big bolts, that attach that lid down. Then the furnace, it opens up like this [indicating], them old furnaces, and then they come back in. That was approximately 3- or 4-inch thick concrete. Then there was a big old cover that went down on that that weighed about three or four hundred pounds. That thing blew that lid off with all them bolts, blew the lid, blew the furnace cover off, and blew that big old cover with the top of the ceiling and then a beam. And then they came out in the paper and said there wasn't nothing in there explosive. That scared everybody to death, you know.

But they had them people back in there working in just a little while after that. They had them around in there cleaning up and everything. I felt like they should have gotten them out of there. They had an explosion and no telling how much of that stuff, you know, was still in the air.

But that's some of the examples that I wanted to talk about. Acid—many a time that acid—it's right outside the door there, and the fumes off that thing would come in the production area, you know, and you'd be there slagging a derby or something and it would burn your nose and you go to coughing and you couldn't stand it, the fumes off that acid tank.

And to my opinion, they just didn't care. They've told me to hunt another job, you know, and Barlow, he just—I don't know what his problem is.

To give you another example about cleaning the respirators, do you know where they cleaned them? In a contaminated area, and they had some buckets there, and they had water and some kind of solution, and you'd get it down in that solution, you know, and you'd dip it over in this water and rinse it off, maybe dip it over here [indicating], rinse it off with water and then you'd wipe it off. That was in a contaminated area, and I've seen many a time, old black stuff down in there. It must have been that black oxide and probably UF-6, too. Whatever got on your respirator was down in there. And, to my knowledge, I've never seen them change that. They said they did, but I ain't never seen them. It's a funny thing, every time I'd look at it, it would be nasty. I mentioned that in my safety reports, and he got to racking on me and they were going to try to fire me because I got on him over changing them buckets. Me and him got a little irrational toward one another. I said, "You don't change them. I've never seen you change them." "Yes, I do, too." But I've never seen them changed. I've never seen them changed.

We've not got no first aid room. There's no—you know what we've got? I put them on the wall. A little wooden cabinet about like this [indicating]. There wasn't even merthiolate in that thing half the time, wasn't no band-aids. You'd have to go to the foreman's office to get a band-aid, or go all the way to Health and Safety. In other words, you'd have to go out in the dressing room, change your coveralls, go over there on the clean side, so to speak, which I don't think it's the clean side. I always told Brad Squibb it was hot as the dirty side. That's what he told me. He's the health and safety man. He said, 'Oh, we're getting it a little bit cleaner." You know, they just laughed. They thought it was funny. But then you go upstairs and get a band-aid. Here you were bleeding, and why in the world would they have a first aid cabinet—you've got a big cut, say, across the hand. You're in a contaminated area, and here you are doctoring it in a contaminated area. Well, that's just putting contamination in your cut, the way I feel. That's how the people felt.

You take over the vacuum furnaces, over the reduction furnaces, they've got big old fans up there. Do you think there are any filters on them? No. That goes right out in this community at my home down there, and I don't live far from that plant. It goes right out in that community. Whatever comes off them furnaces when they blow out, whatever comes off that vacuum furnace, it goes right out them fans. There's no filter there. The vacuum furnace goes through a pipe, goes out the wall, goes outside out there. Them fans in here, there's a big old--like a garage door right door here [indicating] and here's the vacuum furnace [indicating]. It pulls it right back in the plant. Them fans, you know, don't pull stuff out. They'll pull that smoke right back in the plant, and there it is, smoke.

They didn't do nothing about it. They just laughed over that. I told them they weren't doing their job. Those fans weren't doing their job. They didn't have no filters on them. And they just laughed.

I told them—I told Ray Hunnicutt out in the plant one day, I said, "Ray, listen, you've laughed at us, you've made fun of us, you think we're just a bunch of dumb hillbillies." I said, "We might be, but we've got bodies and we've got hearts and we've got feelings." But I said, "The people—now, you think it's me, it's not." I said, "It's the people. They relate to me," because I was the chairman of the Health and Safety Committee. They related to Mickey Lenore and Terry Shephard, that's the two. One would help me one time and another help me another. I said, "These people are tired of breathing this stuff." I said, "They go home and they cough, they blow it out of their noses." It would be embarrassing to go out to eat somewhere. I don't mean to be vulgar. You go out and blow your nose when you go to eat somewhere and there would be green salt and black stuff, and that's embarrassing to go out with a handkerchief when you go to eat somewhere, something like that is embarrassing. It would be embarrassing to me.

But I told him that those people told me, and I said, "I mean it, too, that we will not come back to work April the 30th until this plant is a clean and safe place to work," and I said, "Those things that I mentioned to you on past reports that you made fun of, and a lot of them you didn't even put down on your company report, anything that we mentioned in April, if you don't correct them," I said, "the people will not come back to work." There's a written statement and it's documented. I've got copies attached to it that I told him about that. He just laughed. He said, "This is a political ball game." That's all he could say, "It's a political ball game. You're playing a political ball game." I said, "No, I'm serious." I said, "Don't you ever take us serious?", and he called it a political ball game. I didn't feel like it's right.

I don't know how this come about, but to give you an example, they'd tell you like a day or two—you'd go to clean the floors and the machines. They say, "Get this. Get this. We've got visitors coming." They wouldn't say who they were. They say, "Clean it up. Clean it up. Better get this cleaned up."

One day out there, I went out and the people came over to me and said, "Mr. Bettis, who is that over in the pen shop walking around with these little machines?" I said, "I don't know." They said, "Well, go find out." By the way, I'm president of the local at my job, and I was the chairman of the Health and Safety Committee. I went out there and I walked up to this little guy and I said, "Hey, who are you?" He identified himself, little short fellow, baldheaded right here [indicating], blond hair, wore glasses. I said, "Have you got anything to do with OSHA, TOSHA?" You know, I don't know all these. I'm just a country fellow. I don't know all the NRC rules and regulations. I don't know OSHA's regulations, all of them. I'm learning a lot about them. During this strike I've learned a lot. I've learned a lot about radiation that I didn't know. The company lied to me and these people.

But I asked him. He said, "I've not got nothing to do with that." I asked him—I said, "We've got health and safety problems. We've got dust and smoke and noise, and these people are fed up with it," and I said, "This company's laughing at us." "I ain't got nothing to do with that," said, "I'm with the licensing of the company." Well, I felt like I was sticking my nose in somebody's business I shouldn't, and I just went on back to work, cause one of the company men was standing there, Mr. Hoynacki looked at me real funny, you know, and I said, "I better get back to work. They're liable to try to fire me." They try to fire you all the time, get something on you. So I went on back to work.

Come to find out later that he did have something to do with it, and Johnny Graves, that's who I found out it was. He did have something to do with it, but he lied to me, and then he told me he'd be in a meeting the next day. That's not right. That's a false statement. But he said he didn't have nothing to do with it.

But, anyway, they'd tell you to clean these machines up. They were up front and all of a sudden they started putting this—I call it polyethylene—plastic over them grinders out in the pen shop. And I can remember this distinctly when that Norman Swain I believe it was—yes, Norman Swain came around, and I said—you know, he called me up front, sat down there at the table with some of the company people—I don't remember who was in there that day—and while they had us up there, and then we came back and he said, "I want to tour the plant." Well, we went back there and I got to the pen shop and I got shocked. I seen a bunch of plastic that wasn't there before. I said, "Hey, man, them wasn't there." I said, "The company—what's going on here?" He said—here's what he said to me—he said, "I can't do nothing. I can't take your word, no more than I can the company." I understood that. I said, "There's something wrong here." I said, "What have they got them plastic over that for?" I said, "I think I know why they've got it over there." I said, "That stuff comes out in them people's face." He said, "Well, I didn't see it, and I can't get them for it unless I've seen it with my own eyes." Well, I understood that, you know.

I don't know why they done it, but now while we were up there, there's a bunch of plastic went on them machines, you know.

But, anyway, those visitors, you know, they might be OSHA or TOSHA or whoever, but I know that we were told in advance a lot of times, you know, and they'd just say, "We have visitors. We're having visitors. Clean up." Sometimes those visitors might be company people. A lot of times, we didn't know who they were. I'm being honest. We didn't know who they were, just walked around, and we didn't know who they were.

But I just feel like the people have been done raw. I've been done raw. I didn't know a thing about radiation. I went to the union and voted for us to belong to the Atomic Energy Council. That's the locals in OCAW at nuclear plants, and they formed together, all the atomic energy plants, and they call it the Atomic Energy Council. Well, I went to a meeting and that's when I learned about radiation, and I thank goodness that we've got a union where I could learn this.

And Dr. Nelson was out at Seattle, Wash., if I remember this, and had a film and he had some materials and stuff. I grabbed them off the table, because I was a little worried. I seen that film there and I said, "Hmm, I'm going to take this to my room and start reading." Then's when I came back and started telling these people. Mr. Mango got some books. He went to asking questions. The people went to asking questions. I went to asking questions. I asked Mr. Williams and Mr. Able questions about it, and they gave me answers, and we found out that we've been told a story.

We were told—most of them I've talked to—I've not talked to every worker there and asked this same question, but I was told this and most of the workers that I've talked to said that they were told there was nothing back there to hurt them, you know. And they used to wear their street clothes in that plant, I was told, wore their shoes, their pants, their shirt, and then went home, worked back in the plant with their street clothes on.

Another thing, I never did see them—do you know when we got a break, where we ate? I never did know them to monitor that up there. If they did, I don't know nothing about it. I'm not saying they didn't, but I don't know it if they have, and that's where we eat. But I do know this: You've got a contaminated area, you've got a piece of tape, and you've got some showers there, too, but you walk through the showers off the contaminated area, walk through that shower and on the clean side, they call it. Well, the socks that you've got on have been back in the plant with you, and the guys would go upstairs with those contaminated socks, and your underclothes would be contaminated, so I'm not sure that that break room ain't contaminated. I know the ceiling tile—one of the guys—one of the maintenance men, Paul Gothnell [phonetic] went up front, and he was doing something to the air conditioner and the ceiling tile, you lift up like this [indicating] and lay it back, and he was up in there doing something and he took and rubbed it off like that and wiped it on his coveralls and had them to check it, and he says it was really highly radioactive, said the health and safety man checked it.

So, you know, I don't feel like like we've been protected. I don't feel like our lives have been protected. That's my opinion, and I hope something can be done about it. That's it.

Mr. GORE. Thank you. Thank you, Mr. Bettis.

Dr. Nelson, move one of them over there.

STATEMENT OF DR. MARK NELSON

Dr. **Nelson**. OK. First, let me say that when I first heard the workers at TNS talk about the conditions in the plant such as John has, I was pretty skeptical, and I wouldn't be surprised if some of the people in this room and up there are skeptical, because John and Vince and other workers there have a lot of stories to tell that seem pretty awful.

I was skeptical because I'm a scientist, and I believe that one has to evaluate what one is told, and things aren't always what they appear to be. I have become convinced, as the record will show, I think, that their concerns are valid and that things are not as bad as they say they are at TNS; they're worse. And it may be hard for some of us who haven't worked in a factory during most of our lives, as I haven't—I have been in school most of my life, and I'm sure that's true for most of the people here—it may be hard for us to hear working people speak about their experience every day of their lives and to learn from that, but I think it's important that we learn from it, because they have a lot to say and a lot to teach us, in spite of all our schooling.

I've been working as a physician for the Oil, Chemical and Atomic Workers Union for the past few years, since 1979, and during this time my work has entailed educating workers about occupational health and safety issues, and working with them to achieve health and safety on the job. I'm presently acting as a consultant for the union.

I appreciate the opportunity to speak with you here today, and I have to say that it's gratifying to find a congressional committee that's concerning itself with worker health and safety. That's true especially now at a time when the regulatory agencies such as OSHA are under attack. Unfortunately, this attack on the regulatory agencies is occurring today, and it's clear today, even with this attack, that we have an ever-growing epidemic of death and disease in the workplace in our country today.

The story at TNS is one small part of that epidemic, and in this sense it is not at all unique. Like many other workers in America today, the workers at the TNS plant in Jonesboro, Tenn., are being poisoned. The records we have obtained from the company reveal consistent and longstanding hazardous overexposures to both ionizing radiation and to the metal with which they work. They make the billets out of uranium, and they're exposed to heavy concentrations of uranium metal.

What I'd like to do today is to present some of the statistical data so we can illustrate the nature and the magnitude of these problems.

Let us examine for a moment what the concentrations of uranium in the urine are in the workers at TNS. The NRC Guide, which I believe you have—it's 8.22—states quite clearly that no worker should exceed a urine uranium concentration of 30 micrograms in a liter of urine. Of the 100 workers now on a health and safety strike at TNS, all but 5 have exceeded this level. That is, 95 workers have at one time or another had urine uranium concentrations in excess of 30 micrograms a liter, usually on more than one occasion.

Now, if we look at this metal, the metal the workers are exposed to, it's uranium. We find it's well known for its ability to damage the kidneys, and NRC Guide 8.22 recognizes this fact. It states that you can have kidney damage if any single urine specimen has greater than 130 micrograms of uranium per liter, or if 4 or more consecutive specimens have greater than 30 micrograms of uranium per liter. I might add that urine samples are taken every 2 weeks on a Monday, following a weekend off from work.

Now, the company also recognizes that uranium can damage the kidneys, and I'd like to stress this fact. It is for this reason that they have established, at least on paper, an action level of 100 micrograms of uranium in a liter of urine, which they say no urine sample should exceed.

Now, if we use the NRC guidelines and the company guidelines, the records reveal a very large epidemic of overexposures to uranium at TNS. Of the 100 employees who are currently on strike, over half of them have exceeded one or both of these guidelines, and in appendix A, which I believe people have up there, I've listed 53 workers who exceed one or both of these guidelines. Single high readings are common. For instance, worker No. 21 in 1980 had one reading of 167 micrograms per liter; another, of 935; another, of 830. Worker No. 37 in 1979 had a reading of 158, and in 1980 two high readings, 196 and 140 micrograms of uranium per liter.

But perhaps of more concern than the single high readings, often on more than one occasion for workers, is the consecutive high readings. Thirty workers have had consecutive high readings for four or more sampling periods. A sampling period is 2 weeks. Four sampling periods is 8 weeks. I refer you back to NRC guide 8.22, that says you can have kidney damage with more than four consecutive high readings.

Worker No. 11, to give you an example, in appendix A the readings are as follows: 72, 50, 165, 140, 55, 92, 78, 55, 80, 51, 74, 35. Twelve consecutive readings. That is a long time. It's 24 weeks of consistent overexposure.

Worker No. 27 had 15 consecutive readings at 30 or above. That represents 30 weeks straight of overexposure to uranium metal, which can damage the kidneys. That's simply incredible.

These overexposures have occurred in the past, and recently as well. In appendix B, I've listed 14 workers who had average urine uranium concentrations of 30 micrograms per liter or greater for the 18-week period January through April 1981.

Other employees in the penetrator shop were forced to wear masks. They had respirators that John has spoken to you about. They were forced to wear them by the company full shift, 8 hours a day, for this entire 18-week period, the reason being that TNS insisted that the respirators would protect the workers. I don't know if anyone here has ever worn a respirator 8 hours a day, but it's a very difficult thing to do, especially when one is trying to work.

In any event, I evaluated the records and I've listed 17 workers in the penetrator shop in appendix C who wore respirators, and of these 17, there are 10 workers whose average urine uranium concentrations were 30 micrograms per liter or greater for this entire 18-week period. Therefore, the argument by TNS that the respirators were protecting the workers was entirely without foundation.

Workers have been forced by TNS to wear respirators because respirators are cheaper than engineering controls.

Now, we have already witnessed a significant epidemic of kidney disease in America today, which is due to lead poisoning, which is laid out well in the OSHA lead standard. We don't want to see this experience repeated with uranium.

Radiation is also a serious health hazard faced by the workers at TNS. The more time passes, the more evidence has accumulated that so-called low-level radiation can do harm. Over the years, we have seen a steady decline in what are deemed the acceptable levels of exposure for both workers and the public. In 1925, the acceptable yearly whole body dose for workers was 52 rem a year. Today it is 5 rem a year. We would argue in fact that this 5 rem limit is much too high, because there has always been a standard, but it's a double standard, with regard to what is safe for workers and what is safe for the public.

If we look at EPA's current standard for people living near nuclear fuel cycle facilities, that standard limits individual exposure to 25 millirem per year; 5 rem is 5,000 millirem, which workers are allowed to receive, and that's 200 times the EPA limit. One can only conclude on this gross inconsistency that workers are either not as susceptible to ionizing radiation as other human beings, or that they're more expendable.

Indeed, the radiation doses received by the workers at TNS have been staggering, and this is especially true if we compare them with other nuclear workers. The average whole body dose for radiation for 47 employees who worked the full year of 1980 at TNS was significant. It was 2.43 rem. I've laid this out in appendix D. Many workers received even higher doses. And this is particularly alarming because these are young people, many of whom will have children in the near future. Radiation exposures of this magnitude can cause serious health risks, not only to workers but also to their current and future families. In addition, there are many workers who worked less than the full year of 1980 who also received high radiation doses in a short period of time. These workers I have laid out in appendix E of my testimony.

Even by current standards, many workers at TNS have been overexposed to ionizing radiation. There are two workers, at least, who were exposed to more than 5 rem in 1 year. There are two other workers who exceeded the allowable radiation skin dose. At least 5 other employees have been put on restricted work assignments in the recent past for the reason that their levels of radioactivity in their body were too high, and 11 workers have shown thorium deposits in their lungs. This material I have described in appendix F of my report.

Now, while the harmful effects of low-level radiation exposure usually take many years to occur, Albert Patton may be an early victim from such exposure. After 7 years at TNS, Mr. Patton now has leukemia. It's acute myelogenous leukemia, a type of leukemia that can be caused by radiation exposures such as Mr. Patton received while working at TNS. Thorium, with which he worked, emits high energy alpha particles which can cause diseases such as cancer if deposited inside the body. According to Mr. Patton and other workers, thorium dust, which is white, frequently covered the workers as well as the machinery in the thorium bay. Mr. Patton is a black man. He says people often thought he was white on walking out of the thorium bay, because he was covered by the dust and breathing it in during that time.

The thorium bay, you should know, was recently excavated, literally excavated, and removed from the plant because of high radioactive contamination. The company had to call in an excavation crew with drills to dig up the concrete, to tear out the metal railing, to remove all of the machinery, because it was so contaminated. Apparently the State of Tennessee was never informed of this procedure, according to their reports.

The history of the struggle for health and safety on the job by the working people at TNS has shown beyond a doubt that as far as TNS and the regulatory agencies are concerned, the workers at TNS are expendable. They have been needlessly and callously exposed in their work, and the company is responsible for their exposures to dangerous levels of radiation, as well as uranium.

Now, the company's radiation protection program is grossly inadequate, as testified to in reports from the Tennessee Bureau of Radiological Health, which I believe this committee has. Yet in spite of inadequate records and procedures on the part of the company that I've listed in appendix G, and despite repeated violations, the agencies in Tennessee have consistently failed in protecting the health and safety of the workers at TNS.

Not only have they failed to protect the health of workers, but on the Sixty Minutes program, one person at least in that agency essentially rationalized the exposures and said, "If you're a working person, you just have to be exposed to radiation if you work in the nuclear field," and I think that a regulatory agency's responsibility is not to justify the poisoning of workers, but to stop it.

If the poisoning of the workers at TNS is not stopped, there will be other victims. For too long many companies like TNS have had the power to tell a worker, as John Bettis has told you, "If you think it's unsafe here, go find yourself another job." This supposed choice is in reality not a choice at all. It is corporate policy and it's blackmail. It is corporate blackmail because it forces people to choose between their lives and their jobs.

The magnitude of the health and safety problems at TNS is well documented, as I have shown in the statistics in this report. But far more important than all of these numbers is the human story that is behind them. It is the story of workers who have maintained a health and safety strike for over 7 months. Workers and their families at TNS have been harassed and intimidated by the company and by company goons. Vince Mango can testify to that, as can other workers in Jonesboro. Homes have been lost, families have been broken up, and people have gone hungry.

I learned about hunger in medical school, and I saw hungry people in the past few years of my life in different parts of this country. But when working people who are on strike for health and safety go hungry, there's something very seriously wrong with this country, or when anybody goes hungry.

The workers at TNS are challenging the awesome power of a corporate complex that spends more money and effort to extract a profit than to protect the health of its workers. This occurs—and I would direct this to you, Mr. Walker—this occurs not only in the State of Tennessee, but in the Aerojet plant that's in Downey, Calif., as well, and if you read the Tennessean this past Sunday, such a story is written by Carolyn Shoulders [phonetic], who is here today, that what has occurred at TNS is not an exception; it is the rule for working people in America today.

The members of OCAW Local 3-974 are fighting a historic and a courageous struggle. In these dark times for all working people, they are risking everything, including their jobs, because they're standing up for their belief that health and safety on the job is a right, not a benefit. They deserve our admiration, our respect, and our support.

Thank you.

Mr. GORE. Thank you very much.

Let me ask you first, Dr. Nelson, you say of the 100 people on strike, 95 of them were exposed to levels of uranium that exceeded the NRC guidelines; is that correct?

Dr. NELSON. Well, yes, basically; 8.22 is a guideline. It's referred to as a guideline, and I think on page 4 of that guideline, which I don't have before me, it states that no worker should exceed more than 30 micrograms of uranium in a liter of urine, but 95 of these workers had at one time or another exceeded that level during their work at TNS.

Mr. GORE. Now, because there is a rather complicated law which governs here, the Nuclear Regulatory Commission has delegated to the State of Tennessee the authority to fix the applicable standards. It's my understanding that the guidelines from the NRC take particular note of four consecutive readings that exceed 30 micrograms per liter; is that correct? They assume that kidney damage can result from four consecutive readings of 30 micrograms per liter or more?

Dr. NELSON. That's correct. When they speak of kidney damage in the next paragraph, they say that it can occur with one exposure over 130 micrograms per liter, or four consecutive exposures, all of which are greater than 30 micrograms. And as I've told you, 30 of the 53 workers who've exceeded the NRC guideline have had the consecutive exposure type of overexposure.

The reason I mentioned 30 is in fact, if you look at the NIOSH study, the National Institute of Occupational Safety and Health, who just did a study on uranium millers at the Cotter [phonetic] Mill in Colorado, they, for example, used the 30 microgram per liter number as a cutoff. They accept that in their health evaluations. Where they, by the way, found evidence of kidney damage, they used that 30 micrograms. But even on the basis of the four consecutive readings, or the 130, 53 of 100 workers have been overexposed.

Mr. GORE. Well, now, Mr. Mango and Mr. Bettis, if I understand what you're saying correctly, you're saying that you were so concerned that your health was being threatened that you were willing to go on strike for that reason, not for more money——

Mr. MANGO. That's right.

Mr. GORE [continuing]. But in order to protect your health; is that right?

Mr. **Mango**. Our health and our families' health, and the community's.

Mr. **Gore**. What convinced you that your health was in danger?

Mr. **Bettis**. Well, just like I said, we began to learn from our Atomic Energy Council meeting. Dr. Nelson has given us material. We've searched and got books and materials ourselves and read about it. A lot of other people have told us, you know, that know about radiation. So we began to question more and more. Anybody that we could get anything from to tell us about it, we began to question, and we began to get answers then.

Mr. **Gore**. But you were left with the impression that the company really didn't care about safety?

Mr. **Bettis**. That's how I feel. That's my opinion. I don't feel like they do, or we wouldn't be out here almost 8 months.

Mr. **Mango**. Can I make a statement?

Mr. **Gore**. Yes.

Mr. **Mango**. I'm more convinced now, since being out of work, that this radiation will and can harm you, because it has done a change in my life. When I worked there—like when I worked there, after I received these high counts, and after my first week I received a high count, I wasn't even notified about it until I got my medical records. But my body—a man can tell when his body is changing, or I can on mine. Like when my body's being exposed to this bombardment of radiation, the immunity system to fight this radiation—it left me vulnerable for like sicknesses and colds. I was weak-feeling all the time. I had headaches. I was dizzy. I thought I had low blood, and that wasn't it. I had my stomach hurting me all the time, and my back hurt me. But since I've not been working, all these symptoms have gone, all except for my back problem.

Mr. **Gore**. Well, now, it's kind of hard, isn't it, to make sense out of the scientific evidence on radiation and all the different standards that are at the State level and the Federal level? Did you find some difficulty in making sense out of it?

Mr. **Bettis**. I don't understand. I didn't understand that. Say that again.

Mr. **Gore**. Well, when you had these questions in your mind, "Is it safe?," there was no place you could go to find a clear statement of what the standard was and what the health consequences of violating that standard might be?

Mr. **Bettis**. Are you talking about rems and stuff like that? I don't know what the levels are and stuff like that, but like Vince said, you had a change in your body. You see the smoke and you see the dust and you breathe it, and we learned in books that it would hurt us, and you've got questions in your mind, "What's it going to do to me?"

I understand the textile workers are a statistic, if I'm correct, that a lot of them—so much percent of them are dying, and I don't know whether we'll be a part of the statistics or not. I don't know. You know, it worries you. Will 10, 20, 30 years from now, if we keep on breathing this dust and this smoke—will we be like those textile workers in those asbestos plants? I don't know. We may not, but we just didn't want to take that chance.

Mr. **Gore**. So you went on strike?

Mr. **Bettis**. We went on strike.

Mr. **Gore**. I'll come back for further questions.

Mr. Walker?

Mr. **Walker**. Thank you, Mr. Chairman.

I think this subcommittee understands thoroughly your health and safety concerns. That's the reason this hearing is being held, and we would hope that it will serve as a way of assuring that health and safety are the foremost concern of people in management, as well as, hopefully, the people in the union, which brings me to a question. We decided earlier today, or we decided yesterday and it will be released later today, to release some documents with regard to the company. Are you aware that there is also a union document which indicates that the negotiators on behalf of the union prior to the strike were more interested in issues other than health and safety, that they were more interested in wages and time and some things like that before the strike took place, and that that particular document is not here to be released, but in fact does cast doubt on whether or not that was really the chief interest of the union when it was proceeding toward the fact?

Dr. **Nelson**. I'm aware, Mr. Walker, that the Oil, Chemical, and Atomic Workers Union has the most aggressive health and safety program of any labor union in this country.

Mr. **Walker**. That's not the question.

Dr. **Nelson**. I am aware——

Mr. **Walker**. Dr. Nelson, that's not the question.

Dr. **Nelson**. I will answer your question. I will answer your question, if you will permit me.

Mr. **Walker**. OK, thank you.

Dr. **Nelson**. I'm aware that the workers at TNS have been concerned with health and safety problems at the plant and have raised them repeatedly at health and safety meetings, and I'm not going to go into length on that. I'll leave that to——

Mr. **Walker**. Are you aware of the document that I spoke of?

Dr. **Nelson**. I'll leave that to our legislative director, Nolan Hancock.

Mr. **Walker**. Are you aware of the document that I spoke of?

Dr. **Nelson**. I'm aware that workers also fight for wages, because they have to eat just like you and me.

Mr. **Walker**. Are you aware of the document which indicates that more important in the negotiations prior to the strike were issues other than health and safety?

Dr. **Nelson**. I'm not aware of it.

Mr. **Walker**. OK. Well, we had indications in union documents, and I would hope that since the document that I'm referring to that this committee released—I would hope that the union would also be willing to release that document, because I think it would help make a very sufficient record here, because I think what you have raised, Dr. Nelson, Mr. Bettis, Mr. Mango—I think the kinds of things that you have raised here today are extremely serious concerns, and they may well be reasons for the kind of action that you've decided to take, and I admire the fact that you have taken such a strong action, but I think that we ought to make the record wholly clear, and that's the reason I would hope that all documents with regard to this case will be a part of the public record, and not just selective documents with regard to——

Mr. **Gore**. Will the gentleman yield?

Mr. **Walker**. Yes, I'll be glad to yield, Mr. Chairman.

Mr. **Gore**. Without objection, we will seek that from our witness, and without objection, we'll make it a part of the record.

[Material follows:]

County of Washington)
) SS
State of Tennessee)

AFFIDAVIT

I Larry G. Able, being first duly sworn upon my oath, hereby state as follows:

I have been given assurances by an agent of the National Labor Relations Board that this affidavit will be considered confidential by the United States Government and will not be disclosed as long as the case remains open unless it becomes necessary for the government to produce the affidavit in a formal proceeding. Upon the closing of this case, the affidavit may be subject to disclosure only in accordance with Agency policy.

I reside at Suite 703, Northshore I, 1111 Northshore Dr. Knoxville

My telephone number is 615-929-0724.

I [✓ am] (was) employed by The Oil, Chemical, and Atomic Workers Union International as an International Representative

located at Knoxville, Tennessee.

¶ I have been a ~~full time~~ representative [for OCAW] since 1979. I presently serve [also] as coordinator for the Atomic Energy Workers Council, and have served in this capacity for approximately 1 3/4 LGA years.

¶ As an International Representative, I have been responsible for servicing TNS since October 1979. I also organized the plant in 1978.

¶ I have ~~been~~ [worked] in the atomic industry since 1967, when I worked as an operator and ~~[illegible]~~ quality control employee and radiation monitor at LGA Nuclear Fuels Services in Erwin, Tennessee. I also served on the safety committee [at Nuclear Fuels]. I left Nuclear Fuels in October, 1979, [to join the Union staff].

On or about ~~February 15~~ December, 1980 I met with the [TNS] ~~safety~~ [employee] bargaining committee to get proposals [for the new contract]. John Bettis, President of the local, and chairman of both the safety, and bargaining committee[s] told me that a great number of workers were being rotated out of "hot" [contaminated] areas into cold, uncontaminated areas, and [that] many [workers] were being laid off after they [had] worked in the hot areas.

LGA

Pettis ~~[illegible]~~ told me that everyone in certain areas had high radioactive uranium urine counts. I realized that there was a great safety problem, as 15 20 persons were being overexposed, while at Nuclear Fuels Services very few people were coming up with high urine counts, and [LSA they did] they got them [(only)] [illegible] few months, and there were 3 times as many people at Nuclear Fuels Services [(as at INS).] Pettis also told me that ~~the~~ the employee locker room was divided [(only) i.e.] by tape line between contaminated and clean [(areas)]. It is [(the)] practice in the nuclear industry to partition the clean and contaminated areas to prevent radiation from contaminated work clothes. At INS the employees were not prevented from mixing clothing, or shielded from contaminated work wear.

LSA [insert a]

After the meeting, or within a few days later, I informed Ron Sparks, Industrial Relations Manager, that we were concerned about the above problems, and [(that)] our bargaining would include health and safety proposals. He said they realized they had problems and were working on them.

On or about ~~February~~ January, 1981, the company put employees on respirators in contaminated areas and required them to work in respirators during the full eight-hour shift. This showed me that there was a problem at the plant [(because)] this is contrary to the N.R.C. LSA ~~[illegible]~~ regulations, which require a written respirator policy, and a lung test. Other nuclear plants require respirators [(only)] when there [(is)] was a spill, and not other times.

On or about February, 18, 1981, I met with Ron Sparks, and Safety Director Jerry LSA ~~[illegible]~~ Hoynacki concerning LSA ~~a~~ grievances, and complained about the respirators. I told them we expected them to clean [(the plant)] it up. Hoynacki said he was working on [(it)] ~~them~~. I told him we would bring

LSA

this up at negotiations if it ~~wasn't~~ was not corrected before then. Also present were John Bettis, local [3-974] President, and employee Mickey Lenoir.

From on or about February 15, 1981, until on or about March 15, 1981, ~~[illegible]~~ several ~~[illegible]~~ people had LGA [problems with] ~~[illegible]~~ their doctors ~~[illegible]~~ LGA ~~fitting~~ wearing the respirators. These same [employees] were laid off, instead of moved to different areas of the plant. [illegible]

On or about March ~~23~~ 20, 1981, Bettis called me, and said he had had a safety meeting with ~~the employees~~ LGA Roy Honeycutt, health [illegible] ~~[illegible]~~ LGA ~~to walk out~~ representative, and Honeycutt [had] misquoted Bettis' remarks to ~~[illegible]~~ LGA Hoynecki, and Joe Romaine Manager, LGA that employees wanted ~~they were~~ to walk out immediately over health and safety. What ~~Bettis~~ Bettis [had] really said was ~~they~~ [that the employees] wouldn't return to work after April 30, 1981, unless safety conditions improved. ~~[illegible]~~

I told Bettis to correct this. ~~[illegible]~~

On or about March ~~[illegible]~~ 24, 1981, TNS, and OCAW held their first negotiating session at the Johnson City Holiday Inn. Present were J.D. Bettis, Charles Carson, Mike Elam committeeman, [Randy Garwood], another committeeman, myself, Elbert Mosier, Corporate [Vice President] Personnel ~~Manager~~ V.P. LGA, George Kriska, Corporate Manager, ~~Joel~~ Craig, [corporate benefit ~~[illegible]~~ [manager]], and George Christiansen, Plant Manager.

I started to present our proposal, and Kriska said he wanted to put some changes in in April 11, because we were behind in wages and benefits. I told him ~~no~~ LGA, it was normal for us to present our proposal first, because of plant LGA problems, and then we will be happy to listen to ~~your~~ [his] proposals. Kriska said, "No, we'll present ours." I said ~~I~~ [that] we couldn't

L G

[illegible] CONTINUED

a caucus. We caucused, and I called OCAW attorney Robert Wages, who said [that] ~~since~~ we were the moving party ~~so~~, we made the first proposal. I then called John Williams, who said the same thing. KBN Later, We went back in, and I told them this. The company still refused, and caucused again. [that] would be

At approximately 1:00 p.m., after lunch, the union and company met again. Mosier said, "Go ahead and present your proposal." I told Mosier that I would explain each proposal. The company said they would ask questions if they needed explanation. No comments or questions were asked. When I got to the safety proposal I said we had severe health and safety problems in the plant, and had numbers of employees with high urine counts, and had employees ~~kicked out the door because they couldn't~~ wearing ~~a~~ respirators eight hours a day. I said this was the reason we were [proposing] to change the contract on health and safety to take care of the workers. The company didn't comment.

After I was finished, George Kruska presented the company proposal. He said, "We realized this plant [is] ~~was~~ behind in wages and benefits, and wanted to implement these wages and benefits on April 1, 1981." He said they wanted to talk about economics first. We said we wanted to negotiate, and [that] health & safety problems had to be discussed before economics. We said we didn't want their economics unless they would straighten up these other areas. We rejected their economics.

¶ The union caucused again in the late afternoon. At approximately 7 p.m. we reconvened with John Williams [District Director, was] also present for the union. Williams said he didn't appreciate TNS's cramming ~~[illegible]~~ these wages down our throats when we had all these safety problems in the plant.

1:61

Kriska said they thought their main problems were wages, and didn't feel they had the safety problems we complained of. John Williams said if they didn't clean up the place they could ship it back to California, because he didn't want to see the people contaminated. I told Ms. Craig, who was taking notes, that anytime we discussed safety she quit writing. She didn't comment. I brought this up during most meetings.

On or about March 25, 1991 TWS and CCAW held their second negotiations at the Johnson City Holiday Inn. The same persons were present except for John Williams. Plant Manager George Christianson stated that he realized we had problems down there and that he wanted the Union to give the new management a chance to straighten things out. I told him that we had been patient, but (that) the people down there were wearing respirators, eight hours a day. ~~and those who didn't were being kicked out the door~~. I suggested that we start back ~~xxxxx~~ LGA through the Union and Company proposals to see what we could or couldn't agree upon. The company agreed. At approximately 12:00 pm we broke for lunch, and reconvened at 2:00 pm. We continued over the proposals and found that we didn't agree on most things. Both sides gave their positions. We then turned to the health and safety problems. I said that before we ever reached an agreement (they) were going to have to ~~give us consideration on~~ LGA ~~kaxx~~ our standard International Union Health and Safety Propsal in the ~~contxasix~~ proposal. LGA We broke off at approximately 3pm.

On or about April 8, 1991, ~~xi~~ in the United American Bank, at approximately 10:00 a.m., a meeting was scheduled between the company and the Union concerning the propsals. The company appeared at 10:30a.m.. I complained about their being late, and Kriska said they had been tied up, and that was the best they could do. We again started at the top, and agreed to get any preliminaries and simple proposals out of the way. Local agreed to withdraw Union 207, and modified ~~Union~~ LGA propsal 1205. Both sides agreed LGA to Company proposal 802 (overtime). We both agreed on LGA the company's proposal 1203 on seniority. The company then ~~submitted~~ brought up LGA proposal 1312 : ~~that~~ they wanted a ten-day layoff without regard to seniority. I said that there was no way we could agree to this especially (in) a plant LGA that was having as high urine samples as they were. Kriska said that he disagreed, that the only reason they wanted this was for business reasons, in case they needed to take out a machine. I asked him would he put in

LGA

writing that this would not be used to lay off a hot person. Kriska said they wouldn't agree. I said that showed that they were going to use it to get rid of people with high urine counts. After this discussion each member of the bargaining committee gave ~~their~~ [his] views of the plant to management. Each member complained about health problems, and [about] how they were mistreated through temporary layoffs, how they had been moved, or not moved, to cold areas. George Christianson said that he was new there and that he had only been there a few months, and asked to be allowed to correct these problems. He also said that the company was very upset about employees writing over the bathroom walls, and had used the bathroom in the middle of that room. He said that he knew he had problems in supervision and had problems in the company, but the bargaining unit employees weren't as goody-goody as the Union was trying to make them. Bettis said he would give the company a list of names of people we felt were being treated unjustly. Kriska took the list from Bettis and said the next morning they would go to the plant and look into the problems. He ended the sessions after this. Some of these employees [(mentioned)] had health problems, others [had other ~~wage~~ grievances.

On or about April 9, 1981, at the United American Bank, the Company, and the Union met for negotiations at 1:00 pm. Present were the same persons as the day before. Christianson said that they had checked over ~~the~~ LGA some of the problems from the list, and [would] let us know later on it. Both sides then went through the proposals, and I told the company we were still miles apart on the ten day lay-off proposal, and the health and safety proposal, since the company wouldn't agree to change anything in the old contract. I also mentioned the addition of "in the opinion of the company" language in article 4, 705, 801, and 907. Both [sides] started to separate the economic from the ~~ex~~ non-economic proposals at the Union's suggestion. At approximately 4:30 pm we broke off, I said [that at] the next meeting we would stay until we reached an agreement, and a date was set. LGA

LGA On or about April 24, 1981, we came back to the bank building. Present were the same people as [at the] last meeting. I said that we were back with hopes of reaching an agreement, LGA and that ~~xa~~ I suggested we work with non-economic proposals and work through. I said that I was very upset that more people had been fired., and laid off due to the respirators and other problems in the plant. Kriska agreed to discuss the non-economic issues first. We started at LGA ~~and both agreedit~~ LGA Article 1 was open. ~~The Union put a hold on both sides' article 3.~~ LGA

LGA ~~The Union said that it would leave Article 4 of the contract as it was if~~ both sides pulled their respective proposals. The Company didn't agree.

The Company said that they felt their Article 5 language should stay in, and both sides could not agree on Article 5.

The Union agreed to leave Article 901 as it was written in the contract. The Company held open its proposed 10-05. We agreed that we were both apart on 12-04 I said that the Union felt the company would use the clause to starve out overexposed workers. Both sides agreed on Company 1303. We both held open 1309, and 1311. The Union maintained that it had to have portions of its Article 20 proposal. The Company said they weren't going to move on their present health and safety contract language because they felt they didn't have as many problems. I asked Christianson how he could make that statement when ~~we~~ [they] were having high urine counts and were making people wear respirators eight hours per day. Christianson said, "I'm still asking for more time." I asked ~~would~~ [if] the Company [would] agree to let the OCAW's professional health and safety people come in and make surveys of the plant. Kriska refused the Union's request. At approximately 1:30 pm John Williams had entered the negotiating session. Williams said there were too many problems in the plant, and that he didn't see them moving on anything in negotiations. He said the Company had been running people out the door every day, and he didn't feel there was any credibility on the management side at all. He said that he didn't think the Company was trying to get along with the Union. He then had a caucus. Shortly after, we discussed Article 19 (limiting Local President's time to conduct Union business). The Company said that it would not change its proposal to limit the Local President [to] one hour per week to conduct business. Again we discussed Article 20. Williams said we were still firm on the OCAW Health and Safety clause. George Christiansen, Plant Manager, said they were staying within state limits, and by staying within them he didn't feel they were having so many problems. Williams said that he didn't feel that they were in the state limits, or required the people wear respirators when NRC and DOE won't allow them to wear respirators for eight hours per day. He said that if the state ~~was~~ [did] allow it, the Union had big problems with them. The Company then asked for a five minute recess. ~~WHEN WE RETURNED~~ Kriska said that alot of accusations about safety were above some of the people's heads in there, and asked us if ~~we~~ [it] would be acceptable for us to be available for them to bring in their health and safety man to come in, and give their side of the story.

On or about April 25,,1981 both sides met at the United American Bank, Both sides were represented by the same persons, including John Williams for OCAW, and Jim Barlow, Safety Manager fot TNS. Mr Kriska made the opening statement that he brought in Barlow to assure us that we didn't have the safety problems we were worrying about. Williams asked what was being done to stop the contmination causing the people to wear respiators eight hours per day. Barlow said that in the grinding areas containers had been put over (the machines) them. I asked him if he had daily checks like all other nucleur plants on the daily air samplers to make sure that they were pulling the air like they were supposed to be doing? Barlow said the company checked the air samples periodically. Willieams asked since they had forced people into respifators eight hours a day, had there been any improvements. Barlow stated they had been evaluating the workers for the last two months. John Williams, "Our people have been and continue to be overexposed while you continue to evaluate them." Williams continued to say that " we do have some rights, you know, and we feel youre deliberately over exposing these people. Christianson said, "Dammit, John, we aren't!" Williams said, "We don't feel your plant is safe, and we don't feel you care. If you don't agrree to clean it up, we won't work past the 30th of April." Williams asked what led up to the people having to wear respiators eight hours per day. Barlow said that the company typically used 100 when we put them on respirators or moved them out. Williams asked what the average the company used, and what was the average they were picking up after the respitators were worn. Barlow said after they wore the respirators they were picking up about 40. Barlow also said that putting them on respirators was for the workers own health and safety, and that was why the company put them on. Williaims said that it was ridiculous for a health and safety man, or anyone who was soppossed to know anything about radiation, to force people to wear respirators eight hours a day, and then claim its way part of a safety program. Christianson asked Barlow, "From what you know, or what the records say, should everyone at the penatrator shop be required to wear respirators." Barlow replied, "the finishing and grinder area is getting close to maybe we can let them off the respirators." Christian asked why anyone need to be in the grinder area or be close to the machines. Barlow shrugged. Christianson asked Barlow how close were they. Barlow said approximately three feet. Christianson then asked Barlow, "Would it be helpful if we confined the grinding area, requiring only the employee who was around the grinder area to wear the respirator." Barlow stated that he thought so. Christianson said that when he

1 G.A

went back to California, they had the same kind of problem, and if you think it will be helpful, I would be willing to enclose the grinder area. Williams said that he thought it would help some. Christianson said that he felt they could do that without any problems. Mosier asked Christianson how long it would take-a month? Christianson said that it wouldn't take that long as they would only have to put up a partition. Williams said that if they didn't do something to clean up the plant, we would all be fighting a bunch of do gooders, possibly even where we don't have problems, but we felt like the problems we were bringing out, were things that needed to be cleaned up. Charlie Carson Local VP said he didn't think they were doing anything because the company told them last week, and this week, that they could pull em off (the respirators) next week, and now there telling us to either put them on or go home. I said that we had over fifteen grievances filed and they needed to be settled. Christianson said they felt like these people were told to write these grievances up. Bettis said why in hell haven't the dust collectors been checked, when I told you ~~they were in bad shape~~ in August 1980, and every month thereafter. Carson siad these are only a few of our safety problems, and I could talk all day on them. Williams said he didn't know how in the hellthey could claim there locker rooms were safe when there was a piece of tape put down in the middle of the floor to seperate contaminated from non contaminated. Christianson said does the state or NRC have regulations on how the locker rooms should be set up. Williams said he didn't know, but said the state wasn't doing its job if it let the company set this one up this way. Christianson said that long before Bettis' reports we knew we had a problem in the locker room. He said the company had a long range and short range plan. The short range was to build to a partitions and the long range to build new facilities. I asked why it was taking so long when we brought it up nearly a year before. ~~CHXXXXXXXXX~~ Kriska said they were moving as fast as possible. The Union then caucused. Kriska siad that they wanted to review some of the situations that the Union brought ~~[illegible]~~ including Charles Carson being put out of the plant. We agreed to break off after the company wanted to review these problems. We agreed to ~~mediate~~ meet at the FMCS on April 27, 1981.

LGA [illegible]

LGA

LGA

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through we presented Doctor [illegible]

(check)

On or about April 27, 1982 we met at the Federal Mediation Building in Knoxville. The same people were present for the Union, and the company had replaced ~~JIMMY~~ Jim Barlow with Ron Sparks, Personnel Manager at the plant. Also present was Federal Mediator Ed Setlmeier.

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Although the meeting was scheduled for 10 am the company arrived over an
hour late. Setlmeier segregated the two parties. We shuttled between the company
and the Union. Present for the Union were the same people. We told Setlmeir
the situation at the plant, and the problems we were having. We told him
e LGA
what we thought was still open in the contravt. We made some changes in the
contract language to get negotiations started. For example we suggested
Company LGA 1315 LGA
that Article 16 be adopted, and it was. We suggested that ECCB language
on retention rights of retention rights be modified. We discussed ways
LGA
we could move on health and safety. ~~AXXXXXXXX~~ At approximately 2pm
px we adjourned. When we resumed at 4:45 we were put together. Present for
the company was the same as last meeting. We agreed on 1103 dyas of leave,
S LGA
1205 Seniority list, We agreed on a non discrimination clause which was
rewritten by both parties. We again discussed health and safety. Williams
w LGA
said he still din't feel like the y were making any changes, to amount to
and
anything in the contract. He said that even if eberything was agreed upon the
safety problems were not, then there would be no agreement. Williams again
suggested that OCAW bring in its own people, and the company still didn't agree.
Williams suggested we bring in NIOSH and have a walk around inspector with
them. The company said they would check it out. At approximately 7pm we broke.
On or about April 29, 1991 , we scheduled a meeting at 10am at the FMCS
Present were the same parties. The company showed up an hour late. The parties
LGA
bargained face to face. The company said they still didn't have anything on
NIOSH We discussed a few of the proposals on 1105 (leave of absence) 1202
(probationary period. They proposed a six month probationary period from 90
days. Williams said he felt like they were playing games, not only on all
the safety problemsbut with the contract. WILLIAMS SAID HE WAS READY TO
accept the TNS final Contract prosal and bring it back to the people to let
them vote on it. Setlmeir said that he had been upset about the company's
lateness.

On or about April 29, 1991 the same persons and parties weerpresent
at the FMCS. The company gave the Union its final proposal. Kriska said
the attached EX 3 was their final offer. I told the company that I wanted
to make it very clear that the company still hadn't addressed the
health and safety problems, and this very issue will cause you a strike.
LGA
I alos said that they had exposed practically everyone over at TNS, and had
no time improved health and safety- Mosier said we agree that we have made
mistakes in the health and safety area, but give us a chance. I said we have
tried for over ayear to have you improve these conditions without any

success, and I also want you to know that we realize that lady over there stops writing when we mention our health and safety problems, and has done it most of the way through the negotiations. I also said she quits writing when anyone on that side of the table says anything regarding our problems. I said that the company probably instructed her to do that.

Mosier replied that wasn't true. Bettis said sibce the last negotiations, we have had safety tours, but half LGA have the time the company wouldn't write the problems down. Mosier asked him if he had attached the other problems to a list. Bettis said he did the last meeting but tht was the first time the LGA company had ever allowed to give them a list. Williams said he had no problems with the economic part of the contract, but it appears that you people are hell bent to put us on the bricks, so we will assure you an orderly shutdown. LGA Mosier asked when the Union would notify the company.XXXXXXX Williams replied after the meeting the next day. The meeting then adjourned.

On or about June 3, 1991 both parties met at the FMCS in Knoxville Tennessee. Present were for the Union Steve Wodka, International Rep for health and safety, John Bettis, Charles Carson, and Mike Elam, and myself. Present for the company was Kriska, Christianson, Mosier, and possibly a note taker. Also present was Federal Mediator Setlcmeir. The Union presented a new proposal on safety. Wodka opened the meeting stating that the OCAW Union was one of the most concientious on health and safety especially in the Nuclear industry. He then introduced EX 4. Kriska said there is a disagreement concerning our health and safety problems and we feel like we are making evry effort to clean up these LGA c-ntaminated areas. GMX I asked how the company could expect people to work in respirat-rs in 117degree heat eight hours a day on a continuing basis. LGA Christianson said they had a respirator program just like their license called for . Wodka said NRC regulation 1910-1000 para E siad that respitators were only to be worn in the cleanup of contamination, not on a continuing basis. He then caucused. When we returned in the afternoon at 2:30 pm, Ed Settlemeir got us across the table, and asked the company could point to any specific dat that you could agree that the people would be off the respirators. Christianson said as soon as possible but he know, LGA LGA couldn't give a date. Kriska said we don't the firm in the Union proposal and we can't respond because we don't know if its a proper firm. He also said that if the comapny brought in a firm the Union would have to pay half the cost of a mutually agreed upon firm. Kriska said under no LGA circumstances would the company allow the firm or any other firm to make recomendations the company felt were not needed. The company rejected the Unions proposal. Bettis requested records from the company health records of employees. ~~[illegible]~~ LGA Kriska said they would provide the records. I told the company that we still didn't have problems with their economic proposal, and if they would only get in line, and face the ~~d~~ safety problems that they had, then we could come to an agreement. I also complained that the company had put into the newspaper that we were on an economic strike when in fact we were ona health and safety strike. The meeting then adjourned.

LGA On or about July 16, 1991 John Williams ~~joined our negotiating~~ LGA team, and Randy Garland committeeman were present along with the same Union negotiating team, when OCAW met with TNS at the FMCS. Present for the company were the same as above only Hoynicki had joined their team. LGA ~~[illegible]~~ Lonnie Stokes Federal Mediator was also present. Stokes seperated the two parties. HE TOLD THE COMPANY THROUGH Stokes that there were no problems with their economic proposal but wanted toha e our health and safety problems takien care of. We also conveyed our dissapproval of their statements that we were on an economic strike. At approximately 11am both sides were brought together. We discussed the ten day layoff without regard to seniority. We asked the company if we gave them additional days would they agree not to use it to lay off those with a high urine count. The company rejected this. We then discussed 2008 which is retention. The Comapny agreed give langauge that we would b protevted for 6 months, and it wouldn't apply to urine counts. That it would apply invivo LGA and full body count~~s~~ only. I asked what we were going to do with theose with a high urine count. Kriska said there is no established count by this state. Williams said you are going to have to give protection for employees who become overexposed in your plant, or we are going to have it one way or another. Willaims also said we think that if you maintain that your paint is safe then you should give our people an opportunity to inspect it. Mosier said that John if you owned a business you would do your own thing, and we have brought in consultants and the state and they all back what Hoynacki says. Williams said it couldn't be safe for the workers besides when you brought in these inspectors and consultants the plant wasn't even running. He said it was still the Unions contention that the plant was unsafe and that the company didn't have the proper safety equipment. Mosier said he didn't agree. Williams said he wanted the area of the safety problems to be cleaned, up h

LGA

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and that is our only problem. We have agreed on your wages and economics but our only problems is that you won't protect the workers from being overexposed. The mediator then broke us up.

On or about September 3, 1981 the same parties and persons met at the FMCS. Settlmeir was the mediator present. He did not have ~~g~~face to face discussions. LGA The Company through the mediator said that they had permanently replaced the IMS workers. They also said they had moved the penetrator shop back to California. They said they didn't need our workers. They said they had hired approximately 53 workers which was more than filling their needs. They said that even if we ~~r~~reached LGA a contract that day none of the workers would be going back. LGA

LGA

I have read this statement consisting of 13 pages, including this page, I fully understand its contents, and I certify that it is true and correct to the best of my knowledge and belief.

Larry G. Abel

Subscribed and Sworn To Before me at
Johnson City, Tennessee
This 19 day of November, 198_

Steven K. Lebel
Board Agent, National Labor Relations Board

Mr. **Walker**. Dr. Nelson, have you examined both the medical records of the union members and given them physical examinations?

Dr. **Nelson**. No. I've examined the records. I have looked at a few workers randomly. I haven't given them physical examinations, largely because we don't have the resources to do that, though hopefully at some time in the future OCAW will have those resources.

Mr. **Walker**. Well, then, what is your specialty that brings you into this particular area? You're a medical doctor and you described yourself as a scientist, too. I assume that that's a combination of——

Dr. **Nelson**. I hope that most physicians are scientists.

Mr. **Walker**. Right. Exactly. OK.

Dr. **Nelson**. I went to medical school at Case Western Reserve. I spent 2 years in a residency at Mount Sinai doing internal medicine. I then spent 2 years with the Center for Disease Control in the cancer branch studying epidemiology. I worked on the Three Mile Island report, for example, that the NRC released that evaluated the doses of radiation that the population received after that accident, and I guess I felt after my years in medicine that it wasn't enough to wait in the hospital for sick people to come to you, especially the diseases that people are afflicted with today, which are largely not curable, diseases like heart disease, stroke, and cancer, and felt that it was my responsibility to go out to where people live and work, and attempt to stop the disease long before it occurs to prevent the disease.

Mr. **Walker**. Radiation, then, is your specialty?

Dr. **Nelson**. Well, it's one of the things I know about to some degree. I wouldn't say it's a specialty, necessarily.

Mr. **Walker**. In other words, what you're saying is that you're not board-certified in that particular specialty?

Dr. **Nelson**. Well, I don't know if there is any board certification in radiation. I'm a doctor who's spent 2 years with the union. Our workers are exposed to a whole host of hazards in the nuclear industry, the oil industry, the chemical industry. I don't think there are boards given in that kind of work.

Mr. **Walker**. OK, is there any particular specialty that you are board-certified in?

Dr. **Nelson**. No.

Mr. **Walker**. OK. All right, now, you've described yourself, as I say, as a physician and scientist. Can you state that any of the union members have developed physical problems directly attributable to radiation exposure?

Dr **Nelson**. Well, a lot of workers have complained of medical problems, and I——

Mr. **Walker**. Have you examined some of those workers?

Dr. **Nelson**. I've done some short exams, but not extensive ones. Our concern here, Mr. Walker——

Mr. **Walker**. Now, wait. If in fact you say that you have conducted some physical examinations on some workers at random, now wouldn't it seem logical that some of the people that you would have looked at would be people who were saying that they had symptoms of problems?

Dr. **Nelson**. Well, yes, and that's exactly why NIOSH is now doing health hazard evaluation of the workers at TNS.

Mr. **Walker**. Well, you're our expert witness testifying here, though, and you've testified that you did in fact perform some examinations of some workers. Now, what I'm asking is have you performed examinations on those who indicated that they were suffering from some problems, or felt that they were?

Dr. **Nelson**. I've looked at some people very briefly. I'm not arguing here today that I have evidence of people who are acutely sick at this time. I would not make that argument. What we are arguing—and I think this has to be appreciated, Mr. Walker—is that occupational diseases frequently take years of exposure and years before they show up. There is a latent period, for example, with carcinogens. An example of that is asbestos workers, who in the 1950's were exposed to levels of asbestos and only 30 or 40 years later we have seen an epidemic of death and disease due to asbestos exposures in the 1950's. We are here today because we want to prevent such an epidemic due to low levels of ionizing radiation and uranium poisoning in that plant. I'm not here to argue that I can give you a list of 20 workers who are currently sick from radiation poisoning. That would be unscientific and not true.

Mr. **Walker**. This committee is well aware, and have held numerous hearings on some of the subject areas that you refer to, and we're well aware of the need for preventive steps, as well as to take steps to relieve what we call emergency situations. What we're dealing with here is a situation where a union has taken the very serious step of striking against the company, in large part because they believed that they were close to having an emergency situation in that plant.

Dr. **Nelson**. Absolutely. Absolutely.

Mr. **Walker**. All right. And you have testified that the situation is not only what it has been described as, it's even worse.

Dr. **Nelson**. Absolutely.

Mr. **Walker**. So you would seem to be oriented toward that. What I'm trying to get from you, as the expert who has been brought in here, the medical expert on this, is the extent of the emergency that is presently there. Now, I have asked you whether or not you examined the people who complained of having problems. You have said yes, you did. Did you find any physical problems that you can now identify as directly attributable to that radiation exposure?

Dr. **Nelson**. Mr. Walker, I said I have looked in a very cursory fashion at some of the workers, a small number, at TNS. There is one individual who I think his disease may be related to his work at TNS, who is Albert Patton, who I mentioned in my testimony, who has leukemia. I'm not saying for sure I know Albert Patton's disease is in its totality due to exposure, though it's entirely consistent that his work exposures to thorium are at least in part responsible for his current leukemia. That's the kind of disease—that's an example of the kind of situation we want to prevent. What I'm asserting here today is not, as I've said, that there are hundreds of sick workers at TNS. What we're asserting is that workers are being poisoned, and if the poisoning doesn't stop, there will be victims, more victims.

Mr. **Walker**. But as a scientist and a physician, rather than as a polemic, your testimony sums up to that there may be a problem but that you have no direct proof that there absolutely is a problem right now?

Dr. **Nelson**. Mr. Walker, in 1950 there was no problem. Asbestos workers weren't dropping dead of cancer the day they were exposed to asbestos. To argue that there's no problem because workers don't have cancer after a year or two of exposure is unscientific. I am arguing that these exposures amount to workers being poisoned, and if they don't stop, we can predict an epidemic of disease in this plant. That is what we are arguing.

I don't have to present—we don't want to count the bodies, Mr. Walker. We're tired of counting the bodies. The companies like to count bodies. I don't have bodies to show you now. That's what we want to prevent. That's why we're here.

If you study this population for 30 years, Mr. Walker, I would predict you will find bodies and victims, hopefully, fewer than might evolve if we can stop the poisoning that's continuing at that plant today.

Mr. **Walker**. Well, as I say, you make a very good witness from the polemic point of view. The problem——

Mr. **Shamansky**. Would the gentleman yield?

Mr. **Walker**. The problem——

Mr. **Shamansky**. Would the gentleman yield?

Mr. **Walker**. I'll be glad to yield to the gentleman in just a moment.

Mr. **Shamansky**. Thank you.

Mr. **Walker**. The problem becomes that, you know, we're asking you also to look at these matters as a scientist and as a physician, and you have indicated that based upon your examinations of workers at the present time, you don't have reason to believe that there are direct health problems that you can now identify. Is that a correct statement?

Dr. **Nelson**. I have reason to believe that there will be direct health problems as a result of the poisoning from over-exposures.

Mr. **Walker**. Well, as I said, you're not answering my question. My question was very specific.

Dr. **Nelson**. Now, Albert Patton may be one example of the type of problem.

Mr. **Walker**. May be one example. Now I'll be glad to yield to the gentleman.

Mr. **Gore**. Well, the gentleman's time has expired, and the gentleman is recognized on his own time.

Mr. **Shamansky**. Thank you.

Mr. **Gore**. We can come back for a second round.

Mr. **Shamansky**. I wanted to comment to the distinguished gentleman from Pennsylvania that we're talking about epidemiological studies, and as I'm sure you don't want to betray a lack of information or knowledge as to what epidemiology means, your line of questioning would seem to me to indicate that maybe you do not, and as the lawyer on the panel of the members, I don't think badgering the witness helps what the panel has to do here.

Mr. **Walker**. Well, if the gentleman would yield——

Mr. **Shamansky**. Yes.

Mr. **Walker**. I thank the gentleman for his statement. The gentleman at the witness table did not identify himself as an epidemiologist. I attempted to give himself a specialty and——

Mr. **Shamansky**. I understand that.

Mr. **Walker** [continuing]. So I thank the gentleman for his comments.

Mr. **Shamansky**. I do appreciate it. Thank you.

Mr. Mango, what were the dates of your employment?

Mr. **Mango**. March 3.

Mr. **Shamansky**. Of what year?

Mr. **Mango**. Of 1979.

Mr. **Shamansky**. And you left in 1980?

Mr. **Mango**. Right. Or this year here, 1981, early 1981.

Mr. **Shamansky**. You were there a couple of years?

Mr. **Mango**. March 1980, excuse me. I meant to say 1980.

Mr. **Shamansky**. OK. During that time did you notice any change in the conditions, the safety conditions?

Mr. **Mango**. As far as the plant?

Mr. **Shamansky**. Yes.

Mr. **Mango**. Well, I noticed that when I first went in there, they didn't even describe what was safe or what was not safe, so I could not tell any change until right up to the very time that the union said that we're going to walk out if you don't clean this place up.

Mr. **Shamansky**. Well, now, did you remain an employee there until May of 1981 when you went on strike?

Mr. **Mango**. Yes, right up to the very last day and they tried to fire me.

Mr. **Shamansky**. Did you work for 1 year or 2 years?

Mr. **Mango**. One year. One year and one month.

Mr. **Shamansky**. But if you went to work in 1979——

Mr. **Mango**. I said excuse me, I meant 1980.

Mr. **Shamansky**. Oh, you went to work in 1980. I'm sorry. OK, I just wanted to clear that up. Thank you very much.

Mr. Bettis, you were employed at the plant until the union went on strike, is that correct?

Mr. **Bettis**. Yes, sir.

Mr. **Shamansky**. All right. Did the strike cause the company to, based on your knowledge, stop production in the area in which you were working, or does the plant continue to work; as far as you know?

Mr. **Bettis**. When we first went on strike, they wasn't working, but now they're working a portion. In other words, the small derby—this is what I was told; I'm not in there, you know—that the small derby is not running and the penetrator shop is not running. The only thing that they're running now is the large derby billet shop area, which is a small portion of the——

Mr. **Shamansky**. In other words, for the most part, the plant is closed down, is what your understanding is?

Mr. **Bettis**. Yes, that's what I understand.

Mr. **Shamansky**. Yes.

Mr. **Bettis**. You know, that's what they say.

Mr. **Shamansky**. Do you have any knowledge as to whether or not the conditions have been changed in the plant since you went on strike?

Mr. **Bettis.** I was told by some guy that called me from the State—I believe it was Mr. Pullum, if I'm—you know, I believe that's the one, as well as my memory—said that they've got a new tow motor, and said that they done something about dust collectors, put them together or something like that, and they've done some engineering in there. I don't know exactly in detail what it is, but they said they'd done some. How much it is, I don't know.

Mr. **Shamansky.** But, essentially, the plant is still closed down?

Mr. **Bettis.** Just for the billet shop.

Mr. **Shamansky.** OK. Now, as a former enlisted man in the Army, I rather responded to your testimony about cleaning up for an inspection. How often were those inspections for which you made these special cleanups?

Mr. **Bettis.** Well, just—I can't remember in detail how many times it was. I just remember that——

Mr. **Shamansky.** Was it very often or infrequent?

Mr. **Bettis.** No, just infrequent. You know, just sometimes the visitors might be somebody from that area, or they might be from California or something like that.

Mr. **Shamansky.** But it wasn't too often, your opinion?

Mr. **Bettis.** No.

Mr. **Shamansky.** However you define too often. Once a month?

Mr. **Bettis.** No, it's longer than that.

Mr. **Shamansky.** All right. Now, when you made these special cleanups, did you then—once the inspection was done, once the visitors left, you went back to some other standard of cleanliness? Is that what happened?

Mr. **Bettis.** Yes, just went back to being normal.

Mr. **Shamansky.** And normal was, as you describe it, with the smoke and dust and things like that?

Mr. **Bettis.** Smoke, dust, fumes, like that.

Mr. **Shamansky.** Did you raise these issues?

Mr. **Bettis.** Yes, I did.

Mr. **Shamansky.** Did you point this out to the company personnel?

Mr. **Bettis.** Yes, I did. I even brought it up to Norman Swain. I said that's not normal. They've not got the plastic over——

Mr. **Shamansky.** What was the response of the company representative?

Mr. **Bettis.** On them doing that?

Mr. **Shamansky.** Yes.

Mr. **Bettis.** A lot of times they just grin or laugh, you know.

Mr. **Shamansky.** But essentially nothing changed up until the time you left, is that correct?

Mr. **Bettis.** No.

Mr. **Shamansky.** All right, thank you very much.

Dr. Nelson, was there any way for—at what time did the union receive information about the Monday morning urine analysis, the taking of the specimens?

Dr. **Nelson.** Steven Wodka, who was an international representative with the union, filed the request under the OSHA access to information law, I think it was in the middle of May, a few weeks after the strike. I really don't recall. Under that law, the company is obliged to supply the information within 15 days. I do know that it took them longer than 15 days to deliver the records to us, but I——

Mr. **Shamansky**. But it came subsequent to the date of the strike?

Dr. **Nelson**. After we went out on strike.

Mr. **Shamansky**. All right, then, if you know, what system does the union have for gaining information with respect to conditions in the plant for the workers it represents? It seems to me that this condition of the Monday morning urine samples is on its face absolutely absurd, but I am concerned about the communication between the union and it's members. Don't you have a method, a parallel method, of gaining information?

Dr. **Nelson**. Well, we can gain information from workers who in fact we talk to and work with around health and safety problems, but——

Mr. **Shamansky**. But that's a rather passive role of the union. You can gain—do you have a system for obtaining that? Do you take an initiative?

Dr. **Nelson**. Yes, our initiative is to file the OSHA access law and get the information we feel we're entitled to.

Mr. **Shamansky**. But you didn't do that until after the strike. What I'm asking you—and I don't know how long you have been with the union. How long have you been with the union itself?

Dr. **Nelson**. For 2 years.

Mr. **Shamansky**. For 2 years. During that time, does the union have an active program for inquiring of its members as to what the conditions are under which these members are working?

Dr. **Nelson**. The OCAW has for years fought the right to know battle, which is an active program whereby we request information from the company regarding exposures——

Mr. **Shamansky**. Doctor, I understand what you asked of the company. Now, I'm asking you as an employee of the union what you asked of the members, your members, which is not asking the company? Do you have an active program?

Dr. **Nelson**. Yes, we do.

Mr. **Shamansky**. Would you describe it?

Dr. **Nelson**. Sure.

Mr. **Shamansky**. What is it?

Dr. **Nelson**. We have educational sessions for rank-and-filers around health and safety issues in the plant. We teach courses on wearing respirators, on when respirators are useful and not. We teach workers about health habits on the job, how to identify hazardous conditions at work, either in terms of accidents or exposure.

Mr. **Shamansky**. But may I point out that what you're describing is where you're giving instructions to the workers. You're not soliciting, it seems to me and I'm trying to get to finding out—do you have an active program to solicit from them in response to questions from your information about health and safety in the plant?

Dr. **Nelson**. Absolutely, yes.

Mr. **Shamansky**. So far you have not described it.

Dr. **Nelson**. No, we do. I mean, a part of the educational programs that we have established is for——

Mr. **Shamansky**. All right, but in fact——

Dr. **Nelson**. I'd like to answer the question.

Mr. Shamansky. OK.

Dr. Nelson. Yes, there are, for instance, health and safety committees in most of the locals in OCAW, and there are surveys and forms which we send out to these committees to complete and send back to the international. This is, for instance, the kind of information, some of which the National Cancer Institute used in doing their study of our oil workers, our refinery workers, where they found an increased rate of cancer, brain cancer.

Mr. Shamansky. But I infer from your testimony that during the 2 years you were there, you didn't know about the Monday morning samples until you inquired under the statute after the strike had begun?

Dr. Nelson. That's correct. I wasn't aware of conditions in the plant until after the strike.

Mr. Shamansky. OK. Are you doing anything within the union to improve your procedures?

Dr. Nelson. Well, we're attempting to gather as much information as we can.

Mr. Shamansky. From your members?

Dr. Nelson. From our members, yes.

Mr. Shamansky. Then I would like to comment that I hope you pursue that avenue, because I think you have a contribution to make which, if I may observe, I don't think you've been making on behalf of your members.

With respect to the relationship between the union on the health aspect and the company, what is the response of the company and what is the position of the union with respect to your testimony on apparent double standards, that workers can apparently have a greater exposure than the community at large?

Dr. Nelson. Well, we have felt for years, as have a number of noted scientists in the radiation field, that there is a double standard, that workers are allowed to receive, quote, unquote, more radiation exposure than members of the public. We feel this is inconsistent.

Mr. Shamansky. Yes, but what has—in negotiations between the union and the company, what was the position of the union with respect to this apparent double standard? And you've testified that it's a double standard. I understand that. Now, I'm asking you what you have done about it in your negotiation with the company?

Dr. Nelson. Well, with regard to this particular strike, if that's what you're referring to, we have argued that a number of things were necessary. No. 1, that an impartial team investigate all aspects of health and safety problems at the plant.

Mr. Shamansky. What's the response of the company?

Dr. Nelson. Well, the company has refused to allow an impartial group into the plant. They refused to talk about it at negotiations, and they have asserted repeatedly that health and safety is not an issue in this strike.

Mr. Shamansky. May I ask another question? With the State of Tennessee, you said the regulators, as far as you could tell, did not fulfill their obligations. My question to you is: What was the attitude of the union toward, say, taking a legal action to require them to fulfill their obligations? Do you have any information on that?

Dr. Nelson. There's been a lot of legal action taken. I'm really not able to discuss that with you and Nolan Hancock——

Mr. Shamansky. Is it because you don't know or——

Dr. Nelson. Well, I know it off the cuff, but Nolan Hancock's is our legislative director.

Mr. Shamansky. Well, if you know, please tell us.

Dr. Nelson. Well, I know there's been a legal action filed. I know a 502 under NLRB has been filed, but I don't know the details of that.

Mr. Shamansky. All right. With respect to your testimony that respirators are cheaper than controls on air, when did you become aware that it was a policy to keep members under respirators for 8 hours a day, as distinguished from cleaning up the air?

Dr. Nelson. Well, I was informed by the workers in the plant that——

Mr. Shamansky. Is this after the strike?

Dr. Nelson. Yes, after the strike had started when I went down——

Mr. Shamansky. How long had that custom or that requirement that respirators be worn all day long been going on in the plant?

Dr. Nelson. That started apparently in January of 1981, for approximately 3 months.

Mr. Shamansky. But the information didn't get to you until after the strike had begun?

Dr. Nelson. Yes.

Mr. Shamansky. Mr. Chairman, I realize my time is up.

I would like to comment, Mr. Bettis, I have seldom heard testimony more effective and convincing than yours. I realize the company will get a chance to refute it, which is what we want to do, but I very much appreciate your testimony today.

Mr. Bettis. Thank you.

Mr. Shamansky. Thank you, Mr. Chairman.

Mr. Gore. Mr. Walker?

Mr. Walker. Yes. Just one more question, Mr. Chairman.

Dr. Nelson, have you ever been in the plant?

Dr. Nelson. No, the company has not allowed me to go inside the plant.

Mr. Walker. Have you ever asked to go in the plant?

Dr. Nelson. Yes, the union has requested that I take a tour, and the company has refused. They've asserted from the start——

Mr. Walker. This was before the strike?

Dr. Nelson [continuing]. That health and safety has nothing to do with the strike.

Mr. Walker. This is before the strike?

Dr. Nelson. No, this was after the strike.

Mr. Walker. You had worked for the company about a year-and-a-half before the strike.

Dr. Nelson. No, I haven't worked for the company. I've worked for the union.

Mr. Walker. I mean—I'm sorry, for the union for about a year-and-a-half before the strike, but during that period of time, you'd never been in the plant, and so what you're telling us here in terms of the atrocious conditions and so on is based upon what you have been told by the workers, rather than what you've seen?

Dr. NELSON. No, it is based upon medical records, company medical records that reveal hazardous over-exposures to workers. These are company records, Mr. Walker. They're not my opinion. This data is on records that I believe you have access to.

Mr. WALKER. Yes. But, again, it seems to me from the testimony that you have just given here to Mr. Shamansky, most of those records are things that you looked at after the strike began, is that correct?

Dr. NELSON. Apparently, the union had requested that information prior to the strike, which I was not aware of, but apparently that request was made.

I would like to comment on the suggestion that there was some failure in a year and a half of not investigating that plant. There were four full-time physicians working for the OCAW, more physicians than OSHA, in fact, has ever had. We have approximately 150,000 members who are scattered across the entire country over five—I don't know how many workplaces, but hundreds of workplaces, and that's a lot of workers and a lot of ground to cover, and I would certainly argue that the health and safety effort in OCAW and all other unions needs to be increased, but the lack of an inspection prior to the strike by the union is not due to our lack of concern. It's due to a lack of resources.

Mr. WALKER. Well, I think we understand that resources can be spread thin. On the other hand, though, we were in a process here where you were in a process of negotiations that led to a strike, and the strike is being based on health and safety. It seems to me that there should have been somewhere along the line some interest in at least the person that the union is using as their scientific expert, as their physician of record on this, in actually seeing the conditions firsthand in the plant before the strike takes place and where the company, of course, would be a little reluctant, I would think, to let the union in at that point.

Dr. NELSON. We requested records prior to the strike and they were not given to us.

Mr. WALKER. I'm saying, though, that the point I'm making is that you at no point even visited the plant.

Thank you, Mr. Chairman.

Mr. GORE. Let me ask a couple of brief questions before we dismiss this panel.

There were two standards that were referred to in your testimony. There's the NRC guideline, and there are the much more lenient standards that were being used by the company.

Dr. NELSON. Uh-huh.

Mr. GORE. Now, the NRC guideline of 30 micrograms per liter was exceeded with respect to 95 of the 100 workers who went on strike?

Dr. NELSON. That's correct.

Mr. GORE. The company had guidelines not of 30 micrograms per liter, but 50 micrograms per liter as a notice level, and 100 micrograms per liter as an action level. Based on your review of the records, what percent of the employees exceeded the notice level of 50 micrograms per liter?

Dr. NELSON. I don't know. I haven't made that calculation, but——

Mr. **Gore**. Well, our calculation is roughly 30 percent, that about 15 percent exceeded the action level of 100 micrograms per liter.

Now, Mr. Mango, you had a level of 1,950 micrograms per liter, is that correct?

Mr. **Mango**. That's what the company told me.

Mr. **Gore**. Do you think that might have been an inaccurate count?

Mr. **Mango**. I don't know. It was during—we hadn't—well, the company had tried an experiment which did not work as well as they had planned and about blew the whole plant up. That's what I've seen, because I was in there trying to put the thing out.

Mr. **Gore**. Yes.

Mr. **Mango**. So I believe it's very accurate for the thing that I'd gone through.

Mr. **Gore**. Well, what happened after your reading of 1,950 micrograms per liter? Were you relocated?

Mr. **Mango**. Well, there was a timespan because I was on Christmas vacation. It was about this time last year. Well, it was during Christmas, is when it was. When I came back from Christmas vacation, there was a time gap in between, then they put me in the upstairs breakroom cleaning—supposed to have been cleaning the floors for a week until my results of my read test came back.

Mr. **Gore**. OK. All right. Well, this first panel has consumed a lot more time than we thought it would because your testimony is quite interesting. I would like to thank all three of you, and if you would remain available for questions, we would appreciate it very much.

Due to the time constraints, we'd like to shift gears and give the company an opportunity at this point to present its side of this dispute.

And I'd like to thank our three witnesses on this panel very much.

[The following material was received for the record.]

December 1, 1981

TO: Committee on Science and Technology
FROM: Vincent Mango
SUBJECT: Health and Safety Conditions at TNS, Inc.

I was employed at TNS for one (1) year and one (1) month. I was employed and started in Maintenance B Class on first shift on a probation period of 30 days and then went to second shift by my self and maintained three (3) shops. I did the same work that five (5) people did on day shift.

I work with all chemicals which the plant used which were UF6, UF4, magnesium, acetone, perchloroethylene, titanium, nitric acid, KOH, propane, argon, uranium oxide, dolomite, gasoline, diesel fuel, kerosene, thorium. To protect me from these elements were a pair of safety glasses, coveralls, safety shoes and leather gloves.

They never told me to wear a respirator. Before I started working the company sent me to the company doctor for a physical examination. I was found to be in good health. I have received two lung scans which took about twenty (20) minutes each. Urine samples were taken on Mondays or Tuesdays, depending on your shift, every two weeks. Before you started your shift you were required to give a sample in a bottle. The speciman was then taken to the Health and Safety Department. Also, they gave me a TLD badge which was kept in the guard shack on the ID card after work. Once I was notified that I had received a high count of 1950 through my urine. When I asked them what they were going to do about it, Barlow told me to drink beer and that he wished that could be put in the company policy that everyone would be required to drink beer. I did not receive any records on my lung count or my body or skin exposure.

Before I started working at TNS, personnel department told me that it was a safe place to work and that they paid good and was going to be there for a long time. They did not give material on the use of radiation or any other materials that the plant uses. No prior instruction before I started. I was even smoking in the plant because they did not ever tell me about that. One of the employees told me that they would fire me if they caught me smoking. I was on day shift for 30 days to learn the equipment. But I was not instructed by supervision. All that I was shown was by other Maintenance Personnel. I can describe in more detail if questions are asked.

Thank you for listening.

Cordially yours,

Vincent Mango

Vincent Mango

VM:jrb

December 1, 1981

TO: Committee on Science and Technology
FROM: Johnny D. Bettis
SUBJECT: Health and Safety Conditions at TNS, Inc.

I was hired on April 11, 1979, if I remember correctly. Before I was hired my wife and I both called the personnel manager of TNS, Jack Silcox, and asked him several questions. My wife and I were concerned what I was going to get into. She and I both heard several rumors about radiation. She asked Jack if there was anything in the plant that could cause me to have health problems. She told Jack she heard it (radiation) would cause cancer, that it might cause future birth defects and might even cause me to be sterile, etc. She asked him if any of this was true. He told her that there was nothing in the plant that could hurt anyone. She talked to him approximately three times. I also called him and asked him some of the same questions. He told me that there was nothing in there that could hurt me. He said that he had children and nothing was wrong with them. I in return asked him if he was sure. He said that he was sure that there was nothing in the plant that could hurt you. A few days before April 11th, I do not remember just exactly how many days before, he called and asked me to come down to the plant. I went to the plant. Silcox talked to me for a little while and then called in the General Foreman. He introduced me and told the General Foreman to take me back in the plant and show me around. He took me on a tour of the plant. To my knowledge he never did say anything about what kind of chemicals were in there, what UF4 or UF6 was, what thorium was or anything else that was back there. The only thing he showed me was, for example, he would say, this is the 6-4 unit over here; over there are the furnaces; here is where we pack pots; here is where we break out derbies out of the pots; here is the pickle (acid) tank; here is the slag box; here is the thorium box. I saw several things but I did not know that there was anything there that could hurt me because that was what Jack Silcox said. We went back up front. The General Foreman took me back to Silcox's office. Silcox said in talking to the General Foreman, "Well I like him. Do you?" The General Foreman said "Yes". So I was told to come to work April 11th. I started out as an operator doing anything I was told. Then approximately November or December I became a lathe operator. In January I became a maintenance man. I have worked all three shifts at the plant. When I worked on second shift I worked by myself trying to keep the plant going.

While working at TNS I have been around several things. Thorium, UF6, UF4, Magnesium, acetone, perchloroethylene, titanium, nitric acid, KOH, propane, argon, hydrogen, uranium oxide, dolomite, gasoline, diesel, etc. We had gloves, coveralls shoes, safety glasses and respirators to protect us. The best I can remember, the only time I wore a respirator was when I changed the filter in the dust collectors which was not very often. When I took my respirator off after changing the filter I would have black oxide under my nose and upper lip. I told the Health and Safety man and he just laughed. He said if I was so worried about that stuff harming my health, why didn't I just hunt me another job.

I wore a TLD badge with my ID card during working hours. After I got off work the badge and ID card were taken to the guard shack.

Before I started work at TNS I did not have to have a physical examination. Later, which was quite a while after I went to work I told my foreman that I wanted a physical. He Kept putting me off. Finally I received a physical. The company had a bus to come in and gave a lung scan one time a year. They would check our urine every two weeks on Monday. I was told they sent them off somewhere and analyzed. At the last we got our samples in a bathroom next to the dressing room. I was never notified about having a high count. I was only told when I asked or requested it on a form.

I have attended some lectures on safety rules. A lot of times it would be out in the production area where there was so much noise you could not hear. I can remember when a lecture was being given and something would happen out in the plant that they needed a maintenance man and I would have to leave and not hear all of it. I still had to sign the paper that I attended the meeting. When lectures were given they were just read off a paper. If you did not understand you had to sign the paper anyway. Also, when we tried to practice safety they would say to let that go. Hurry up and get those pots packed, etc. was what we heard. It was very common to see green salt and black oxide on the floor and on employees.

We have no First Aid room. All we have is little wooden cabinets fastened on the wall in the production area. Most of the time there was not anything in them. Many a time there was not even a Band Aid or Methiolate in them. Most of the time if you got a Band Aid you would have to go to the foreman's office or go change into your clean clothes and go upstairs to health and safety office to get one.

Brad Squibb, who is in the Health and Safety Department told me that in the dressing room the "so-called" clean side was as hot as the dirty side.

I do not remember ever having any on-the-job instructions or supervision on health and safety. The respirators were cleaned by dipping them into a bucket with a water and solution mixture, then dipped into a bucket of water and then wiped off. This cleaning took place in a contaminated area. I have seen black stuff in the bottom of the water on many occasions.

Many times I have seen the billet and small derby shop filled with smoke and dust especially during blow-outs. One day I was dipping derbies in the acid tank. I heard a loud explosion. I rushed to the door and saw smoke and dust. The noise sounded like a bomb had exploded. When I questioned what had happened I was informed that one of the pots which contained UF_4 had exploded. It blew the lid off the pot which was 1/2" thick and held down by eight large bolts and nuts. In turn, this blew the furnace lid off which was about 4" concrete with metal on top. It also blew the cover (approx. 350-400 Lbs.) off furnace and approximately 25 ft. up in the air and bent the steel beam overhead on the building.

I will try to explain this in more detail and in better words in my oral testimony. Thank you for allowing me to express our needs.

Cordially yours,

Johnny D. Bettis

Johnny D. Bettis

JDB:jrb

12/5/81

Congressional Testimony

Health Hazards Faced by the Workers of O.C.A.W. Local 3-974

My name is Dr. Mark Nelson. I have been working as a physician with the Oil, Chemical and Atomic Workers Union for the past two years. During this time, my work has entailed educating workers about occupational health and safety issues, and working with them to achieve health and safety on the job. I am presently acting as a consultant for the Union.

I appreciate very much the opportunity to speak with you today. It is gratifying to find a congressional committee concerning itself with worker health and safety during a time when regulatory agencies such as OSHA are being rapidly dismantled. Unfortunately, this attack on regulatory agencies is occuring despite an ever growing occupational death and disease epidemic in our country today.

The story at TNS is one small part of that epidemic, and in this sense, is not at all unique. Like many other workers in America today, the workers at the TNS plant in Jonesboro Tennessee are being poisoned. Company records reveal consistent and longstanding hazardous over-exposures to both uranium metal and ionizing radiation. I would like to present some statistical data in order to illustrate the nature and magnitude of these problems.

Chemical Toxicity of Uranium

Let us examine for a moment the urine uranium concentrations found in the workers at TNS. NRC Guide 8.22 states quite clearly that no worker should exceed a urine uranium concentration of 30 micrograms per liter (30ug/l.). Of the 100 workers now on a Health and Safety strike at TNS, all but five have exceeded this level.

That is, 95 workers have at one time or another had urine uranium concentrations in excess of 30 ug/l, usually on more than one occasion.

Uranium metal is well known for its ability to damage the kidneys.[1] NRC Guide 8.22 recognizes this fact. It states that kidney damage can occur if any single urine specimen has greater than 130 ug uranium/liter, or if four or more consecutive specimens have greater than 30 ug uranium per liter. (Urine samples are taken every two weeks, on Monday following a weekend off from work.) Tennessee Nuclear Specialties also recognizes that uranium can damage the kidneys. It is for this reason that they have established, on paper at least, an 'action level' of 100 ug uranium per liter which no urine sample should exceed.

Using both company and NRC guidelines, records reveal an epidemic of overexposures to uranium at TNS. Of the 100 employees currently on strike, 53 of them have exceeded one or both of these guidelines. (See Appendix A) Single high readings are common. (See worker #21, #37, and #55). Consecutive high readings are also common. Thirty workers have had consecutive high readings for 4 or more sampling periods. (See worker #11 and #27). Remember that each sampling period represents a period of two weeks. This means that worker #11 was overexposed for 24 weeks, and worker #27 was overexposed for 30 weeks!

These overexposures have occurred in the past and recently as well. In Appendix B I have listed 14 workers who had average urine uranium concentrations of 30 ug/l or greater for the 18 week period, January through April of 1981. Other employees in the Penetrator Shop were forced to wear respirators full shift, eight hours a day, during this entire 18 week period because TNS insisted that the respirators would protect them. However, ten of the seventeen workers (listed in Appendix C) wearing respirators had average urine uranium concentrations of 30 ug/l or greater for the entire time. Thus, the corporate argument that the respirators were protecting the workers was entirely without foundation.

Workers have been forced by TNS to wear respirators because they are cheaper than engineering controls.

We have already witnessed an epidemic of kidney disease due to lead poisoning, in America today.[2] We do not want to see this experience repeated with uranium.

Exposure to Ionizing Radiation

Radiation is also a serious health hazard faced by the workers at TNS. The more time passes, the more evidence accumulates that so called 'low level' radiation can do harm. Over the years, we have seen a steady decline in what are deemed 'acceptable' levels of exposure for both workers and the public. In 1925, the acceptable yearly whole body dose for workers was 52 Rem/year. Today it is 5 Rem/year.[3] In fact, this 5 Rem limit is much too high.

There has always been a double standard with regard to what is safe for workers, and what is safe for the public. EPA's current standard for people living near nuclear fuel cycle facilities, limits individual exposure to 25 millirem per year. The 5 Rem (5,000 millirems) that workers are allowed to receive is 200 times this EPA limit! One can only conclude, based on this gross inconsistency, that workers are either more resistant to the effects of ionizing radiation, or that they are more expendable.

Indeed, the radiation doses received by the workers at TNS have been staggering, especially when compared to other nuclear workers. The average whole body radiation dose for the 47 employees who worked for the full year 1980 at TNS, was 2.43 Rem. Many workers received even higher doses. (see Appendix D) This is particularly alarming because these are young people, many of whom will have children in the near future. Radiation exposures of this magnitude can pose serious health risks both to the workers and their current and future families.

In addition, there are many workers who worked less than the full year of 1980 who also received high radiation doses in a short period of time. (See Appendix E)

Even by current standards, many of the workers at TNS have been overexposed. (See Appendix F). Two workers were exposed to greater than 5 Rem in one year. Two other employees exceeded the allowable radiation skin exposure dose. At least five employees have been put on Restricted Work Assignments in the recent past due to internal radioactive contamination and eleven workers have shown thorium deposits in their lungs.

While the harmful effects of low level radiation exposure usually takes many years to occur, Albert Patton may be an early victim from such exposure. After seven years at TNS, Mr. Patton now has Acute Myelogenous Leukemia. This type of leukemia can be caused by radiation exposure such as Mr. Patton received while working at TNS. Thorium, with which he worked, emits high energy alpha particles which can cause cancer if deposited inside the body. According to Mr. Patton and other workers, thorium dust frequently covered the workers as well as the machinery in the thorium bay. The thorium bay was recently excavated and removed from the plant because of high levels of radioactive contamination.

The history of the struggle for health and safety on the job by the workers at TNS has shown beyond a doubt that as far as TNS and the regulatory agencies are concerned, the workers at TNS are expendable. They have been needlessly exposed by the company to dangerous levels of radiation. The company's radiation protection program is grossly inadequate, as testified to in reports by the Tennessee Bureau of Radiological Health. Despite inadequate company records and procedures, (see Appendix G) and despite repeated violations, the regulatory agencies in Tennessee have consistently

If the poisoning of workers at TNS is not stopped, there will be other victims. For too long companies like TNS have had the power to tell a worker "if you think it's unsafe here go find yourself another job." This supposed choice is in reality not a choice at all. It is corporate blackmail, forcing people to choose between their lives and their job.

The magnitude of the health and safety problems at TNS is well documented, as the statistics in this report show. But far more important than all of these numbers is the human story behind them. It is a story of workers who have maintained a Health and Safety strike for over seven months. The workers and their families at TNS have been harassed and intimidated by the company and company goons. Homes have been lost, families have been broken up. The workers at TNS are challenging the awesome power of a corporate complex that spends more money and effort to extract a profit than to protect the health of its workers.

The members of O.C.A.W. Local 3-974 are fighting a historic and courageous struggle. In these dark times for all working people, they are risking everything, including their jobs, to stand up for their belief that health and safety on the job is a right, not a benefit. They deserve our utmost admiration, respect and support.

In Solidarity with Local 3-974,
Mark Nelson
Mark Nelson M.D.

Footnotes

1 A study by the National Institute for Occupational Safety and Health examined uranium effects on the kidney in workers at a uranium mill. They found that excretion of the low molecular weight protein, beta-2-microglobulin, was significantly higher in the urine of uranium workers compared to that of control workers. Increased excretion of this protein is a sensitive indicator of renal (kidney) tubular cell injury.
Study was completed in September 1981, HE 81-055-954. Authors are Michael Thun MD, Dean Baker MD, Alexander Smith MD, and William Halperin MD.

2 See Occupational Exposure to Lead, Final Standard, Department of Labor, OSHA. Tuesday, Nov. 14, 1978, Part IV. Federal Register, Vol. 43, No. 220, page 52958.

3 In fact, current standards allow a worker to receive up to 42 Rems whole body and internal organ exposure in a given year.
See The Bulletin of the Atomic Scientists, Nov. 1980, letter by Robert Alvarez on page 58.

Appendix A

Workers with Excessive Urine Uranium Concentrations*

Worker	Uranium Concentration	Year
#3	140, 125	1980
#4	80, 55, 30, 86 4 consecutive readings	1981
#6	245 67, 74, 39, 48 4 consecutive readings	1979 1979
#7	590	1980
#11-R.**	39, 50, 40, 41 4 consecutive readings 72, 50, 165, 140, 55, 92, 78, 55, 80, 51, 74, 35 12 consecutive readings	1980 1980-81
#12	62, 44, 35, 38 4 consecutive readings 52, 150, 34, 82 4 consecutive readings	1980 1981
#13-R.	150	1980
#14-R.	45, 40, 35, 30, 37, 43, 32, 31 8 consecutive readings 130, 56, 37, 67, 52 5 consecutive readings	1979 1981
#15	160 70, 105, 39, 51, 57, 68, 62, 34, 52, 41 9 consecutive readings 130	1978 1980 1980
#16-R.	123 94, 55, 30, 60 4 consecutive readings	1979 1980
#17	136	1978
#18-R.	38, 33, 40, 56 4 consecutive readings 150 50, 61, 34, 56, 40 5 consecutive readings	1979 1980 1981
#21	167, 935, 830	1980
#23	75, 58, 103, 61, 41, 44 6 consecutive readings	1981
#27	88, 30, 36, 56, 70, 70, 35, 36, 70, 75, 88, 53, 40, 42, 32 15 consecutive readings	1980-81

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[*] expressed in micrograms of uranium per liter of urine, (μg Uranium/Liter)

[**] R. signifies that worker wore respirator during 1981 in the penetrator shop.

Worker	Uranium Concentration	Year
#28	155	1977
	57, 210, 38, 85 4 consecutive readings	1978
	74, 36, 36, 42 4 consecutive readings	1979
#29-R.	140	1980
#32	49, 68, 68, 60, 30 5 consecutive readings	1979
#34	78, 30, 75, 44 4 consecutive readings	1981
#36	119	1981
#37	158	1979
	196, 140	1980
#39	296	1978
	38, 39, 140, 172, 116, 49 6 consecutive readings	1979
	150	1980
	31, 56, 43, 45, 130, 80 6 consecutive readings	1980
#40	102, 37, 73, 85 4 consecutive readings	1980-81
	2200, 490	1981
#41	44, 40, 36, 38 4 consecutive readings	1981
#42	115	1980
#43	220	1980
#44-R.	200	1980
#51	190, 44, 98, 41, 32 5 consecutive readings	1980
#52-R.	120	1980
	104	1981
#54	155	1981
#55-R.	100, 491	1979
	196	1980
#57	106	1978
#60	38, 40, 75, 31 4 consecutive readings	1980-81
#62	366	1979
#63	56, 37, 39, 46 4 consecutive readings	1979

Worker	Uranium Concentration	Year
#64-R.	38, 55, 45, 123 4 consecutive readings	1980
	89, 41, 48, 59, 52 5 consecutive readings	1981
#65	140, 1850	1980
#66	48, 53, 96	1981
	(these 3 consecutive high readings	
	occurred over a 4 two week sampling period)	
#70	210, 250	1981
#74	63, 91, 82, 31, 43, 37, 32, 140	1980-81
	8 consecutive readings	
#76	120	1979
	210, 125, 46, 240, 46	
	5 consecutive readings	1981
	310	1981
#78-R.	490	1977
	474	1978
	60, 40, 42, 82, 84, 45, 60	
	7 consecutive readings	1981
#81	115	1980
	118, 47, 46	1981
	(these 3 consecutive high readings	
	occurred over a 4 two week sampling period)	
#82	100	1980
#83	140	1980
	50, 130, 170, 85, 123	
	5 consecutive readings	1980-81
#84	62, 48, 172, 38, 81, 71, 98, 30, 40,	
	66 10 consecutive readings	1979
	250, 190, 30, 34, 43 5 consecutive readings	1981
#86-R.	125	1980
#87	150	1980
#89	183, 93, 32, 36 4 consecutive readings	1980
#95	107, 35, 61, 43, 63,123, 68	
	7 consecutive readings	1979
	38, 42, 54, 32, 30, 30, 40	
	7 consecutive readings	1981

Worker	Uranium Concentration	Year
#96	41, 46, 35, 48, 47, 73 6 consecutive readings	1980-81
#99-R.	135	1980
	140	1981
#35-R.	70, 60, 48, 36 4 consecutive readings	1980-81

Appendix B

Urine Uranium Concentrations in Workers Without Respirators

There were many employees who were not mandated by the Company to wear respirators. Some of them are listed below. Consecutive urine uranium concentrations and average concentrations for the 18 week period January through April 1981, are listed below.

Employee #	Consecutive Urine Uranium Concentrations*	Average Concentration
4	19,80,55,30,86,20,16,6,2	35
9	29,16,40,32,29,72,21,2	30
12	38,16,52,150,34,82,7,8,15	45
23	58,103,61,41,44,26,26,15,22	44
27	35,36,70,75,88,53,40,42,32	52
34	28,78,30,75,44,28,17,43,37	42
40	37,73,85,2,2200,490,11,13,2	324** (89)
54	12,15,13,47,42,155,2,10,2	33
70	2,19,210,30,250,12,31,90	81
76	210,125,46,240,46,8,310,5	124
79	17,53,46,60,10,16,16,36,54	34
81	28,118,47,46,12,36,26,13	41
84	54,18,2,2,250,190,30,34,43	70
95	42,10,38,42,54,32,30,30,40	34

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* These concentrations as well as the average concentrations are in micrograms of uranium/liter of urine.

** If this worker's count of 2200 ug/l. for one sample is discarded, the average concentrations is 89 ug/l.

Appendix C

Respirator Use and Urine Uranium Concentrations

Seventeen employees in the Penetrator Shop wore respirators from Jan-April 1981. Consecutive urine uranium concentrations and average concentrations for that 18 week period are listed below.

Employee #	Consecutive Urine Uranium Concentrations*	Average Concentration**
11	140.55.92.78.55.80.51.74.35	73
13	67.55.11.22.22.9.11	28
14	14.130.56.37.67.52.23.31	51
16	40,55,26,63.27.40.43.22.73	43
18	6,50,61,34,56,40,27,42,14	37
29	76,17,21,40,24,35,32,2	31
35	17,18,4,19,31,11,70,60	35
38	34,44,31,24,19,28,25,33	30
44	9,23,21,35,12,13,16,30	20
52	104,4,30,5,26,8,7	26
53	5,18.5	12
55	8,17,42,21,20,18,31,25,5	21
64	27,89,41,48,59,52,15,37,11	42
71	2,22,5,23,2,2,20,26,2	12
78	40,42,82,84,45,60,18,22,24	46
86	30,19,4,34,94,20,20,5	28
99	12,35,140,28,18,54,54,19,19	42

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* Samples taken every 2 weeks.
Concentrations expressed in micrograms uranium/liter of urine

** Concentrations expressed in micrograms uranium/liter of urine

Appendix D

Occupational Radiation Exposure Histories of Workers at TNS 1980

Using Company records, I have listed those workers currently on strike against TNS, who worked the full year 1980 and for whom there is exposure data for whole body x or gamma ray radiation exposure.

Employee #	Exposure in Rem
3	1.648
6	2.701
11	1.712
13	2.580
14	1.728
15	3/755
16	2.701
17	2.441
18	1.722
21	2.391
24	3.213
28	3.635
29	1.762
32	4.183
34	2.772
35	2.299
36	2.305
37	1.743
38	2.393
39	3.410

Employee #	Exposure in Rem
43	2.354
44	2.279
48	2.696
52	2.371
53	1.978
55	1.757
57	1.378
59	2.009
61	2.264
62	2.501
63	2.161
64	1.888
68	2.053
71	2.107
73	1.636
74	3.456
77	2.867
78	2.246
81	2.035
82	3.424
83	2.150
84	2.190
85	2.229

Employee #	Exposure in Rem
88	3.370
89	3.347
95	1.844
97	2.527
47 current employees who worked the full year of 1980.	The average whole body dose is equal to 2.43 Rem.

Appendix E

Radiation Doses for Workers who Worked less than 12 months in 1980

A number of workers who were hired on during 1980 (and therefore worked less than 12 months) have also received high radiation doses. Some of these workers are listed below:

Employee #	Dose in Rem*	Hiring Date
4	2.671	3/19/80
7	1.450	3/25/80
25	1.491	3/5/80
27	1.955	4/22/80
31	1.204	3/5/80
40	2.168	2/22/80
49	2.263	2/25/80
51	2.396	3/5/80
72	3.345	2/26/80
75	1.907	3/10/80
79	2.051	4/15/80
80	1.856	2/29/80
100	2.246	8/11/80

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* Whole Body Exposure

Appendix F

Radiation Overexposures at TNS

Employee #	Nature of Overexposure	Year
43	Received 8.451 Rem, whole body exposure (exceeding 5 Rem limit)	1978
24	Received 6.858 Rem, whole body exposure (exceeding 5 Rem limit)	1978
32	Received 9.651 Rem to the skin (exceeding 7.5 Rem limit)	1980 3rd quarter
77	Received 9.821 Rem to the skin (exceeding 7.5 Rem limit)	1979 3rd quarter
79	Internal contamination Restricted Work Assignment	1980-81
51	Internal contamination Restricted Work Assignment	1980-81
12	Internal contamination Restricted Work Assignment	1981
39	Internal contamination Restricted Work Assignment	1980-81
70	Internal contamination Restricted Work Assignment	1981

Appendix G

Inadequacy of Company Records

Dosimeter Records

TNS provided information on dosimeter records for only 35 of the current 100 workers. Many of these workers are receiving the equivalent of a chest x-ray a day to their entire body. This is particularly important because most of these workers are young men in their early twenties. Many of them will undoubtedly plan children in the future. It is not unusual for exposures to be above 100 mRem on some days.

We are also concerned because

1.) there are no records of dosimeter readings (daily radiation exposure measurements) for the other 65 workers at TNS.

2.) many of the 35 workers who were monitored were not monitored for the duration of their employment.

3.) daily dosimeter records go back to August 1979. There are no records prior to this time. Were workers monitored prior to August 1979 and if so, where are the records?

It should be noted that TNS does have radiation estimates for all 100 employees at the plant. That is, there are estimates of the total yearly dose received by each worker. However, daily dosimeter records exist for only 35 workers. How then did TNS arrive at estimates for the other 65 employees? At this time, TNS has not provided us with enough information to answer this question.

False Information

TNS records show that Evelyn Rimel received approximately 2 Rem of radiation in 1980. However, according to her daily dosimeter records for 1980, she received 4 Rem.

TNS records show that Kathy Brown received 331 mRem during the first three months of 1981. However, according to her daily dosimeter records she received 430 mRem (whole body radiation) during that period.

This 100 mRem difference is particularly important because these three months were in fact the first trimester of her recent pregnancy.

In Vivo Monitoring

TNS failed to provide the Union with the necessary information with which to evaluate their in vivo monitoring data. For example:

1.) The energy spectrum of the gamma rays that are measured was not provided, nor was the minimum detectable level provided for the system being used.

2.) No information was provided with respect to the MPBB (Maximum Permissible Body Burden) levels used in their calculations.

3.) The records indicate that only the lungs were monitored for internal contamination. Liver and bone were not monitored. This is particularly important because uranium and thorium (which was used until mid 1980) distribute internally to these sites.

Albert Patton hired on at TNS in 1974 and worked with thorium during these years. From 1974 to 1977 there is no in vivo data at all! He recently was diagnosed as having AML (Acute Myelogenous Leukemia). This kind of leukemia can be related to radiation exposure and it is quite possible that his disease is at least in part related to his work at TNS. He was fired by TNS in 1981.

Mr. **Gore**. I'd like to call now Dr. Robert Schell, vice president and general manager of the Heavy Metals Division with Aerojet Ordnance Co., with offices located at TNS, Inc., at Jonesboro, Tenn.

Now, Dr. Schell, you are accompanied by two other gentlemen?

Dr. **Schell**. Yes, sir.

Mr. **Gore**. Now, will both be offering testimony, or do you have one person representing you as counsel?

Mr. **Dennis**. I'm representing him as counsel.

Dr. **Schell**. One is representing me as counsel, and the other is our director of environmental affairs and safety.

Mr. **Gore**. And you'll be serving as counsel, is that correct, and not offering testimony?

Mr. **Dennis**. That's correct.

Mr. **Gore**. Well, if you two gentlemen, then, would raise your right hands and be sworn?

Do you swear the testimony you're about to give is the truth, the whole truth and nothing but the truth, so help you, God?

Dr. **Schell**. Yes, sir.

Mr. **O'Brien**. I do.

Mr. **Gore**. Thank you very much, Dr. Schell. Without objection, the entire text of your prepared statement will be included in full in the record at this point, along with the document that we referred to earlier, which will form the basis of some questions at the conclusion of your prepared remarks, but you are invited now to proceed with your prepared statement, or a summary, as you see fit.

Dr. **Schell**. Thank you very much, Mr. Chairman.

[The prepared statement of Dr. Robert Schell was received for the record.]

COMMITTEE ON SCIENCE AND TECHNOLOGY
Subcommittee on Investigations and Oversight
December 8, 1981

Statement of:

Dr. Robert A. Schell
Vice President and General Manager
Heavy Metals Division
Aerojet Ordnance Company

Mr. Chairman:

Thank you very much for the invitation to appear here today. We welcome the opportunity to review recent activities at TNS, Inc.

I am Vice President and General Manager of the Heavy Metals Division of Aerojet Ordnance Company. This includes responsibility for TNS. My office is at TNS.

TNS is in Jonesboro, Tennessee, in two buildings totaling 50,000 square feet on a 30-acre site. We make ordnance items for the Department of Defense. Since TNS was acquired by Aerojet Ordnance Company in 1976, the facility has been expanded twice and is currently undergoing a third expansion which will more than double the existing manufacturing area. When Aerojet purchased TNS, the company had 30 employees. We now have 120.

In our production at TNS, we use depleted uranium (DU) because of the high kinetic energy it can deliver in armor-piercing projectiles. The ammunition is conventional ammunition, not nuclear.

Depleted uranium must be handled with care, principally because of its chemical toxicity rather than its low level of radioactivity. It is less toxic than chromium, lead, mercury, nickel or tin, according to the Threshold Limit Values developed by the American Conference of Governmental Industrial Hygienists.

On May 1, 1981, the Oil, Chemical and Atomic Workers' International Union and its local affiliate called a strike against TNS. This came after many weeks of intensive negotiations. The union leadership demanded in these negotiations that we give up many of our management rights in order to prevent a strike. We simply could not accept that condition. This real cause of the strike has been overshadowed by all of the publicity given to charges by the union of health and safety hazards at the facility.

I would like to make a couple of points at the outset:

First and foremost, I am personally completely dedicated to the health, safety and welfare of all of our employees. In this, I have the complete support of our parent corporation. I am far more concerned than any outside agency or organization.

I have personally been associated with depleted uranium as it is used in conventional ordnance manufacturing technology and processes even before the very first production. Other members of the management staff at TNS have similar experience.

We operate a safe plant. This has been shown through inspections by State of Tennessee health organizations, and was re-emphasized as recently as November 5 when the Tennessee Occupational Safety and Health Administration (TOSHA) reported its most recent inspection showed just that.

While the union leadership has repeatedly stated this strike is over health and safety issues, TOSHA has reported it never received a complaint from a TNS employee before the strike. Health and safety became an issue only as a means to an end for the union to assume control of TNS operations.

Since Aerojet acquired TNS five years ago, we have made many significant changes. We have an on-going program of regularly and consistently upgrading our operational procedures. A major consideration in all of these improvements was development of ways to provide an even better place for all of us to work and live. As an example, the design of a new liquid waste treatment system was begun in the fall of 1980, and we are hopeful we will have all of the necessary permits to complete construction early next year.

While we do operate a safe plant, there is one very real health and safety problem in the Tri-Cities area of East Tennessee. It is one over which TNS has no control. That is the action taken by some of the strikers against persons and property. Homes have been blasted with shotguns. The plate glass window of the local newspaper was shot out after an editorial was published condemning the violent actions of union members.

Security guards at the plant have been shot at and bombarded with rocks and other pieces of metal. Electric transformers in the area have been deliberately shorted out, depriving not only our plant but many homes in the area of vital electricity. No less than seven of the strikers have been arrested and jailed for acts of violence. I would like, at this time, to offer for the record copies of a few newspaper articles dealing with some of these actions.

Now let me move on to a new subject -- that of hiring replacement workers for those striking employees who chose not to come back to work. We made this decision to re-start operations only after much deliberation. We fully realized that such an action would cause unrest among the strikers and mean further hardship for their families. We went to every length possible to avoid such an event. As one last step, we contacted the international president of the union in Denver and asked for a personal meeting to see what might be accomplished. He agreed to meet with us, and we spent a full day in Denver going over the details. He agreed to a second meeting in Tennessee, but then called back and said there was really no need to meet again, since he felt nothing could be accomplished.

I point this out to emphasize we did everything we could to settle the labor dispute, short of surrendering legitimate management authority.

When it became obvious that agreement was not possible, we advertised our job openings. We received 1,553 replies. From those, we hired a permanent work force that is doing a truly fine job for TNS, the State of Tennessee, and the country.

It was not easy. One of the new employees had his door shot out with a shotgun blast -- and this employee was the Boy Scout leader for many of our striking employees.

I am happy to report now that our production is going even better than we had hoped and we are meeting our commitments to the government in a healthy, safe and effective manner.

Now, I would like to respond to the specific points presented in Chairman Gore's letter of November 16.

Negotiations:

Since March 24, 1981, there have been 12 company-union negotiation meetings, of which six were with the Federal Mediator. The union initially presented 90 proposals and, prior to the strike, modified its position on only five. The company presented 40 proposals, and modified its position on nearly half. The principal area of disagreement was regarding management rights. Because this labor dispute is still unsettled, and because of the recent union action against TNS before the National Labor Relations Board, I respectfully suggest it would be inappropriate to discuss these negotiations in any greater detail.

Health Conditions:

In response to a complaint by the union, TNS was inspected May 5 and 6 by the Division of Radiological Health of the Tennessee

Department of Public Health. The report to the union said TNS action levels regarding urine samples, "appear to be in line with those utilized at other facilities within the industry. The action levels also appear to have been set at values below those levels at which hazards to employees have been shown to exist."

Last month, the Tennessee Department of Labor, Division of Occupational Safety and Health, notified TNS that an October 6 inspection showed the company to be in compliance with TOSHA regulations.

There are two principal exposures we monitor closely -- the amount of external radiation received by an employee, and the amount of uranium dust particles inhaled.

Our monitoring for external radiation shows no employee exceeding the annual limit in 1979, 1980 or 1981; one out of 125 in 1978; and three out of 90 in 1977. Measurements are made through a thermoluminescent dosimeter (TLD) worn by each TNS employee. TLDs are charged every two weeks, and read by a certified laboratory. If the TLD reflects a high exposure, the employee is transferred to another work area to eliminate continued exposure while an investigation is conducted to verify the validity of the exposure and to establish additional controls, if necessary.

As for dust inhalation, two means of monitoring are used -- analysis of uranium levels in urine and in-vivo (lung) scans. Since 1977, 19 employees out of a total of 563 monitored have shown urine readings exceeding the TNS action levels, and appropriate action was taken in each case. These action levels, which had been concurred with by the Tennessee Division of Radiological Health, are designed to detect, as early as possible, any trend in order to take steps to avoid health damage.

The lung scans are used to detect the presence of thorium or uranium. Of 548 scans since 1978, five employees exceeded the permissible level for thorium and were restricted from working with thorium until a repeat scan showed acceptable levels. No employee has had a valid scan over the uranium limit since the program began in 1978. TNS no longer processes thorium.

For the record, I would now like to submit a list of regulatory guidelines and supplementary publications used in assessing worker exposure.

Respirator Usage:

In December 1980 and January 1981, higher than acceptable airborne uranium dust levels were recorded in the penetrator line grinder area. Urine samples showed five grinder operators had uranium urine levels which exceeded TNS action levels, while all other TNS employees remained within limits. It was recognized that it would take some time to define and install proper engineering controls to reduce the airborne concentrations. Four of the five grinder operators were then transferred to jobs in other work areas. (The fifth operator's uranium urine level had subsequently dropped below the action level and, thus, the operator was not transferred.) The four operators returned to their normal work stations after their uranium urine levels had dropped to acceptable values. Following federal, state and company regulations, it was judged respirators would be appropriate as a temporary solution. The mandatory respirator program was therefore instituted in late January.

However, the degree of fluctuation in the uranium urine levels indicated other factors might have contributed to higher than normal levels. In early March, it was determined the urine collection process should be changed to more fully conform with procedures suggested by the Nuclear Regulatory Commission. In late March, these new procedures were put into effect to assure the samples were meaningful and consistent. Urine uranium levels dropped dramatically as expected. Respirators were kept in use since the airborne levels were still unacceptable. Based on this decline in urine levels, it was concluded that the mandatory respiratory program and new sampling procedure was effective in demonstrating reduced employee exposures.

Monitoring Tests:

Medical check-ups are required before employment. All employees working in controlled areas have in-vivo examinations (lung scans) twice a year. All other personnel are given an annual scan. Urine samples are taken and tested every two weeks from employees working in controlled areas, and monthly from all other personnel. Samples are collected in a contamination-free lavatory at TNS on the first work day of alternate weeks. All employees wear thermoluminescent dosimeters (TLDs), and all production workers additionally wear finger badges.

Training:

We have an intensive training program for all employees which meets national and state requirements. It includes presentation and discussion relative to the use of depleted uranium at TNS, the chemical aspects of depleted uranium, route of entry into the body, radiation effects, chemical effects, fire potential/prevention, sources of exposure relative to operations, required process/production controls, administrative controls, personal protection, personal hygiene, determination of personal exposure levels, environmental sampling, records, incident/accident reporting, employee rights under the law, and respirator training and usage. This is an on-going program which includes both classroom and on-the-job training. All employees take part in weekly safety meetings.

Monitoring By State Agencies:

Tennessee Department of Labor, Division of Occupational Safety and Health (TOSHA), and State of Tennessee, Department of Public Health, Division of Radiological Health (RadHealth):

Both TOSHA and the Division of Radiological Health monitor our operations with regulations that are consistent with their national counterparts.

TOSHA -- Three inspections at TNS have been made by TOSHA in 1980-81. In January 1980, an inspection resulted in 13 citations relative to physical safety (not health violations) and a fine of $420. In April 1980, one citation for lack of an adequate first aid program was issued. There was no fine. Inspections in January and March, 1981, resulted in three citations -- failure to enforce use of employee hearing protection in high-noise areas, employee exposure to uranium in excess of the allowable average which TOSHA said was not considered serious because employees were wearing respirators, and an anti-backflow device was not provided in a potable water system. The only fine was $520 for the noise violation. A letter TNS received from TOSHA, dated November 5, 1981, reported all violations had been corrected.

RadHealth -- During the period 1970-79, three inspections were conducted. Since 1979, there have been six inspections resulting in 49 deficiencies, all of which have been corrected or sufficiently answered. The last inspections were in May and October 1981. There are currently no outstanding issues or deficiencies. RadHealth does not invoke fines.

It should be noted that in addition to TOSHA and RadHealth inspections, TNS has an extensive program of self-inspection and audit to provide improvements beyond what might be expected from the governmental agencies. The Environmental Health and Safety staff is composed of well-trained professionals in this field.

Thank you very much.

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COMMITTEE ON SCIENCE AND TECHNOLOGY
Subcommittee on Investigations and Oversight
December 8, 1981

Statement of:

Dr. Robert A. Schell
Vice President and General Manager
Heavy Metals Division
Aerojet Ordnance Company

FOR THE RECORD

Regulating Guidelines and Supplementary Publications Used in Assessing Worker Exposure:

1. "State Regulation for Protection Against Radiation," dated 10 November 1978, Tennessee Department of Public Health, Division of Radiological Health.

2. NRC Regulatory Guide 8.11, "Application of Bio-Assay for Uranium," dated June 1974, relative to body burdens and MPBB.

As a supplement to those noted above, and as a means of reference, the following publications also have been used:

a. NRC Regulatory Guide 8.22, "Bioassay at Uranium Mills," currently being circulated for comment by NRC as a reference source relative to collection of urine specimens and establishing means of quality control.

b. Union Carbide Nuclear Company, November 1962 report, "Radiation Standards and Practices," relative to urine analysis.

c. National Lead of Ohio, 1970 publication, #NLCO-1119, "Review of Uranium Excretion and Clinical Urinalysis Data in Accidental Exposure Cases."

d. International Commission on Radiological Protection (ICRP) Guideline, Publication #10, "Evaluation of Radiation Dose to Body Tissues from Internal Contamination Due to Occupational Exposure," dated April 1967, relative to body burdens and MPBB.

e. National Council on Radiation Protection and Measurements (NCRPM) Guideline, "Management of Persons Accidently Contaminated with Radionuculides," dated April 15, 1980.

f. U.S. Army Material Development and Readiness Command Handbook, DARCOM HDBK 385-1.1-78, "Safety Procedures for Processing Depleted Uranium," dated August 1978.

g. Data published by Helgeson in various Health Physics Journals relative to body burdens.

STATEMENT OF DR. ROBERT SCHELL, VICE PRESIDENT AND GENERAL MANAGER, HEAVY METALS DIVISION, AEROJET ORDNANCE CO.

Dr. SCHELL. Thank you very much for the invitation to appear here today. We welcome the opportunity to review recent activities at TNS, Inc.

As you just indicated, I am the Vice President and General Manager of the Heavy Metals Division of the Aerojet Ordnance Co. This includes responsibility for TNS, and indeed my headquarters are at TNS.

TNS is in Jonesboro, Tenn. It's located in two buildings approximating 50,000 square feet on a 30-acre site. We make ordnance items for the Department of Defense. Since TNS was acquired by Aerojet Ordnance Co. in 1976, the facility has been expanded twice, and is currently undergoing a third expansion which will more than double the existing manufacturing area.

When Aerojet purchased TNS, the company had 30 employees. We currently have 120.

In our production at TNS, we use depleted uranium, commonly known as DU, because of its high kenetic energy that it can deliver in armor-piercing projectiles. The ammunition is conventional ammunition, not nuclear.

Depleted uranium must be handled with care, principally because of its chemical toxicity, rather than its low level of radioactivity. It is less toxic than chromium, lead, mercury, nickel, or tin, according to the threshold limit values developed by the American Conference of Governmental Industrial Hygienists.

On May 1, 1981, the Oil, Chemical & Atomic Workers' International Union and its local affiliate called a strike against TNS. This came after many weeks of intensive negotiations. The union leadership demanded in these negotiations that we give up many of our management rights in order to prevent the strike. We simply could not accept that condition. This real cause of the strike has been overshadowed by all of the publicity given to charges by the union of health and safety hazards at the facility.

I'd like to make a couple of points at the outset, if I might.

First and foremost, I am personally completely dedicated to the health, safety, and welfare of all of our employees. In this, I have the complete support of our parent corporation and organization, and I am far more concerned than any outside agency or organization.

I have personally been associated with depleted uranium as it is used in conventional ordnance manufacturing technology and processes even before it was used in production. Other members of the management staff at TNS have similar experience.

We operate a safe plant. This has been shown through inspections by the State of Tennessee health organizations, and has been reemphasized as recently as November 5, when the Tennessee Occupational Safety and Health Administration reported its most recent inspection showed just that.

While the union leadership has repeatedly stated this strike is over health and safety issues, TOSHA has reported it never received a complaint from a TNS employee before the strike. Health and safety became an issue only as a means to an end for the union to assume control of TNS operations.

Since Aerojet acquired TNS 5 years ago, we have made many significant changes. We have an ongoing program of regularly and consistently upgrading our operational procedures. A major consideration in all of these improvements was development of ways to provide an even better place for all of us to work and live. As an example, the designing of a new liquid waste treatment system was begun in the fall of 1980, and we are hopeful we will have all of the necessary permits to complete construction early next year.

While we do operate a safe plant, there is one very real health and safety problem in the Tri-Cities area of east Tennessee. It is one over which TNS has no control. This is the action taken by some of the strikers against persons and property. Homes have been blasted with shotguns. The plate glass window of the local newspaper was shot out after an editorial was published condemning the violent actions of union members.

Security guards at the plant have been shot at and bombarded with rocks and other pieces of metal. Electric transformers in the area have been deliberately shorted out, depriving not only our plant but many homes in the area of vital electricity. No less than seven of the strikers have been arrested and jailed for acts of violence. I would like at this time to offer for the record copies of a few newspaper articles dealing with some of these actions. I believe these copies have already been provided.

Mr. GORE. Dr. Schell?

Dr. SCHELL. Yes, sir.

Mr. **Gore**. Those articles are not directly relevant to the matter at hand, but at your request and without objection from the members of the subcommittee, we will include those in the record.

Such incidents are never helpful to reaching a solution, and we would, in fairness, invite the employees to present for the record at the same place in the record a detailed exposition of the incidents on the other side that they referred to.

Dr. **Schell**. Fine. Thank you, Mr. Chairman.

[The following material was received for the record:]

JOHNSON CITY, TENN.
PRESS CHRONICLE
EVENING 22,500

AUG 26 1981

How short our memories

It would seem the lessons from the Jarl Extrusions strike in Elizabethton have been soon forgotten.

During a strike at Jarl, a security guard was killed by a bullet fired from a passing automobile. Two men have been sentenced to prison as the result of that tragic incident.

TNS Inc. in Washington County has been under strike for several months. There have been sporadic reports of violence and vandalism. But now a TNS striker has been charged with assault with a deadly weapon on allegations that a rifle was fired from an automobile at the plant.

A strike of private employees at a private business is a part of our economic process. But the whole complexion of labor relations changes with violence; there simply is no place for violence in our society in the negotiations between unions and management. Such violence is illegal and immoral, without justification. And it can lead to the ultimate — the death of a human being. The Jarl killing shocked Carter County. We would hope that Washington County will not have a similar shock.

Law enforcement officers should act promptly to curb violence. And the courts should deal severely with offenders. It is not a question of being pro-union or anti-union, not a question of being pro-management or anti-management. It is simply a question of being anti-violence.

The lesson taught by the Jarl tragedy is one which should be uppermost in the minds of all concerned.

JOHNSON CITY PRESS-CHRONICLE, Wednesday Morning, September 23, 1981

JOHNSON CITY PRESS-CHRONICLE, Wednesday Evening, September 23, 1981

On the edge of violence

Fourteen shots were fired into the offices of the Jonesboro Herald and Tribune on Sunday night.

The bullets from a .38-caliber weapon pierced a plate glass window seven times and seven others struck the building. Fortunately, the newspaper offices were not occupied at the time of the shooting.

Jonesboro officers suspect that the vandalism might be connected with the newspaper's coverage of the TNS Inc. strike. The newspaper had received an angry telephone call over a picture on trash left by strikers. If the policy theory is so, it would be another instance in which guns have been fired in the labor disturbance.

There is no room in labor negotiations for firearms. If continued, there is the possibility of injury or even death. We again remind all concerned of the Jarl Extrusions strike in Elizabethton where a security guard was killed by gunshot.

One of the bullets fired at the Jonesboro newspaper office went through the plate glass window and struck a framed reproduction of the U.S. Constitution and Bill of Rights. It is irony of the highest order that the document which guarantees freedom of speech, freedom of the press — and even the right to strike — was struck by a cowardly bullet, fired in the dark of night, and during Constitution Week at that.

It would seem that some people have not learned anything after 200 years about fundamental values or rights.

JOHNSON CITY TENN. PRESS-CHRONICLE®
Daily 25¢—Sunday 50¢
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WHAT THE PEOPLE DON'T KNOW WILL HURT THEM
JOHNSON CITY, TN 37601, TUESDAY EVENING, AUGUST 4, 1981
Phone 615-929-3111
2

20 new employees enter struck plant

By LINDA SANDERS
P-C Jonesboro Bureau

About 20 new employees at TNS Inc. crossed the picket line and went to work today.

The strikers walking the picket line appeared unaware that the transition was going to take place until the new employees were through the gate.

Ed Smith, a company spokesman, said, "We've hired some top quality permanent replacements for striking union workers."

Smith continued to say that the new employees are at present going through an extensive training program.

Some strikers are expecting violence and one said "If this keeps up, there's going to be a killing."

Another striker said, "Anyone can be provoked — some more easily than others."

The new employees appeared to have met at some point away from the plant and were transported to work in vehicles driven by the security force or management.

The new workers came to work at about 8 a.m., the same time the guard force changes duty at the plant.

Because of a temporary injunction levied against both union members and management, only three strikers are allowed on the picket line at one time.

Two Washington County Sheriff's Department deputies were at the plant this morning, though, they said, they are there every morning and appeared not to be aware that the transition was going to take place.

Union workers at the plant went on strike April 30 after rejecting the company's contrat offer.

Though the company and the union have sat through several negotiation sessions, no agreement can be reached.

The union maintains the strike is over health and safety issues and the company says the strike is an economic one.

Union representatives said recently that the union accepted the companys economic offers but would not accept the company's health and safety package.

Strikers at the plant have complained that they have been over exposed to radiation.

The plant uses depleted uranium to manufacture armour-piercing bullets for the Department of Defense.

About 95-union workers went on strike and it appears the company will introduce new employees to the plant on a daily basis until they are all trained.

Smith said the "company will continue to accept applications until our workforce requirements are fullfilled.

"This is simply foreward progress on our previously announced plans to get back into operation."

J.D. Bettis, Oil, Chemical and Atomic Workers Union Local 3-974 president, said this morning that he did not have a comment on the hiring until he went to the picket line and talked to the strikers.

KINGSPORT, TENN.
TIMES-NEWS
D. [illegible]

JUL 14 1981

Jonesboro union leader fears violence

FRONT PAGE

JONESBORO — The leader of striking employees at a nuclear ammunition plant said yesterday he fears violence if company officials push ahead with plans to begin hiring replacements for the picketing workers.

John Bettis, president of the local division of the Oil, Chemical and Atomic Workers union, said he has urged calm, but acknowledged he "can't promise" the men will heed his advice when the hiring starts.

"When you start replacing their jobs, it's no telling what they are liable to do," Bettis said.

TNS officials announced last week they would begin hiring workers to take the place of the strikers. The workers left their jobs May 1 at TNS, which was formerly called Tennessee Nuclear Specialties.

Workers at the plant say they walked off because the plant is unsafe.

TNS General Manager Bob Schell said the company is permitted by law to hire replacement workers because of economic reasons.

"With the strike almost 10 weeks long and no end in sight, the company has decided to resume some of the plant operation because of their importance to the country's national defense," the company's hiring announcement said.

The plant fashions armor-piercing shells for the Air Force from depleted uranium. Plant officials said in the manufacturing process, radioactive dust sometimes becomes airborne.

TNS is owned by Aerojet Ordnance Co., a Los Angeles subsidiary of General Tire and Rubber Co.

The striking workers say they walked off for health and safety reasons, while plant officials maintain an agreement could not be reached over wages, hours of employment and other conditions.

John Williams, district director of the Oil, Chemical and Atomic Workers union, said last month workers have indicated that many have been overexposed to radiation.

The workers fear inhaling the uranium, which is a heavy metal, might also cause liver and kidney damage.

TNS officials have maintained the plant is safe.

THE NASHVILLE TENNESSEAN
NASHVILLE, TENN.
D. 130,340 SUN. 228,506

JUL 20 1981

For Contempt

3 N-Munitions Strikers In Jail Without Bond

JONESBORO, Tenn. (UPI) — Three striking workers, including a union vice president, remained in jail without bond yesterday on contempt charges stemming from violence at a nuclear munitions plant.

The men were jailed Saturday by Washington County Circuit Court Judge Ed E. Williams III.

CHARLES CARSON, local vice president of the Oil, Chemical and Atomic Workers of America union, was jailed for five days, while Larry Garst was given two 10-day terms and Raymond Houston was handed a two-day sentence. The men were fined $50 each for throwing rocks at the TNS Inc. Plant. The activities were in violation of a temporary restraining order issued last month prohibiting violence during picketing.

A Washington County Jail spokesman said yesterday the three men would not be allowed out on bond and would have to serve their entire sentences.

Authorities have reported sporadic fights at the plant, a shooting and a collision between a delivery truck and strikers since the 95 union workers left their jobs April 30 when their contract expired.

man Ed Smith declined to say how many had been hired. Of 155 employees at the plant, 95 are striking while the rest are still on the job, conducting research and development projects, Smith said.

Both sides began negotiations in Knoxville Thursday with federal mediator Lonnie Stokes in an effort to resolve the strike. Workers accepted a 25% wage hike, but rejected as inadequate company proposals dealing with health and safety for employees.

The talks stretched on for 26 hours before Stokes called them off Friday. No further negotiations have been scheduled.

"THE NEW HIRING program continues, and we are moving ahead with our plans to get back into operation," said Smith. "We will hire as many employees as is necessary for us to fulfill our business obligations."

TNS, formerly called Tennessee Nuclear Specialties, is owned by Aerojet Ordnance Corp., of Downey Calif., which is a subsidiary of General Tire and Rubber Co. The Air Force bullets are manufactured under a Department of Defense contract.

JOHNSON CITY, TENN.
PRESS CHRONICLE
D. EVENING 22,014

AUG 6 1981

Striker pleads guilty to charge of assault

By LINDA SANDERS
P-C Jonesboro Bureau

A striker at TNS Inc. pleaded guilty to assault and battery and was placed on probation Wednesday in General Sessions Court in Jonesboro.

Larry Garst pleaded guilty to hitting Walter Burrow, a plant security guard, with a rock on July 13.

According to Burrow's testimony, he was on guard duty at the plant when he was hit with a rock reportedly thrown by Garst.

After the incident, Burrow was taken to the Johnson City Medical Center Hospital, where he was treated and released.

David Williams, also a security guard, testified that he saw Garst throw the rock that struck Burrow.

Based on the testimony, Judge Stewart Cannon ruled there was sufficient evidence to bind Garst to action by the grand jury, but Garst then entered the guilty plea and was placed on 11 months and 29 days of probation.

He was also fined $50 and court costs and ordered by Cannon to make restitution.

Following the assault and battery hearing, a charge against Garst of destroying private property was dismissed.

George Christensen, the vice president of operations at the TNS plant, had charged Garst with breaking a glass from his automobile.

Cannon ruled there was not enough evidence to charge Garst with the offense.

The hearing Wednesday was associated with acts of violence as a result of a strike that began May 1 at TNS.

Other strike-related cases involving violence will be heard Monday at 2:30 p.m. in General Sessions Court at the Ash Street Courthouse in Johnson City.

JOHNSON CITY, TENN.
PRESS CHRONICLE
D. EVENING 22,014

AUG 1 1 1981

Shooting reported by TNS employee

P-C Jonesboro Bureau

A new employee at TNS Inc. reported to county deputies early Sunday that someone had fired a shotgun into his house.

David C. McQueen, Water Plant Road, Jonesboro, told Sgt. David Story that at about midnight, he heard a car stop outside his home and then heard a shotgun blast.

According to the officer's report, the shot was fired from the road and entered the house through the screen in the storm door, spraying the wall opposite the entrance with about 30 pellets.

Story said the holes in the wall were about two to four feet from the floor.

The incident was apparently related to the strike at TNS — new employees were hired as replacements for the strikers and began crossing the picket line at the plant Aug. 4.

Union workers at the plant began the strike May 1 after rejecting the company's contract offer.

The plant, located near Jonesboro, manufactures armor-piercing bullets from depleted uranium for the Department of Defense.

JOHNSON CITY, TENN.
PRESS CHRONICLE (Morning)
D. 4,169 SUN. 28,570

AUG 25 1981

TNS striker charged after shooting incident

P-C Jonesboro Bureau

A striker at TNS Inc. has been charged with assault with a deadly weapon and ordered not to be released on bond, which was set at $5,000.

James Ruble, 23, was arrested by Sgt. Dennis Garst, Washington County Sheriff's Department, on Saturday and General Sessions Court Judge Stewart Cannon ordered Ruble not to be released on bond until he appears in court.

According to the warrant, on Aug. 18 Ruble was identified by non-union employees at the plant as the person who fired a rifle from a light blue vehicle.

The warrant also said Ruble was at the picket line cursing the guards and saying "go get those people who took our jobs."

Striking employees at the plant began being replaced last month.

According to the offense report, two guards, Gene Lowe and Paul Scaggs, saw a blue vehicle near the west guard building and they heard an automatic rifle being fired from that location.

According to report, when the officers arrived, there was no one at the strikers tent, located across the road from the plant.

On Aug. 13, Ruble pleaded guilty under the Expungement Statute to assault and battery in General Sessions Court and was placed on probation for 11 months and 29 days.

Cannon ordered on that day that if Ruble violated his probation he should be held in the county jail until he appeared before the judge for a hearing.

Under the expungement statute, first offenders are placed on probation for the maximum period of time they could be imprisoned if found guilty of a crime. If the probation is not violated during the period, all court records of the offense are eliminated.

Ruble is one of over 90 employees at the plant who went on strike May 1, after rejecting the company's contract offer.

The plant uses depleted uranium to manufacture armour-piercing bullets for the Department of Defense.

Jonesboro Herald Tribune Sept. 16, 1981

Health And Safety Involve Much More Than Radiation

By John Howze

The strike at TNS, Inc., in Telford by members of the Oil, Chemical, and Atomic Workers Union International has by now been forever impressed in the minds of those who live in that small community.

Small incidents of violence such as rock-throwing have occurred in the past which involve both company guards and union members, but things appear to have taken a turn for the worse.

In the past three weeks, there have been increased reports of gunfire and speeding vehicles along State Route 34 (old 11-E) in the vicinity of both the strike tent and the TNS, Inc., plant site.

An Editorial

That same time period has seen of them caused by shot-out strikers' tent. transformers or objects thrown across high-voltage lines—obviously done by someone who wants to disrupt power in that portion of the county.

That is in addition to another dozen or so smaller power failures in the immediate vicinity of TNS, Inc., in the past few months.

The Johnson City Power Board estimates the damage at nearly $7,000, and is offering a $5,000 reward for information leading to the arrest and conviction of the party or parties responsible.

This week, in violence that may or may not be related, someone shot out the large plate-glass window of the Herald and Tribune. It will cost nearly $500 to replace.

The strikers admit they are angry with TNS, Inc., but deny any knowledge or involvement in the power failures or other violence.

If that statement is accurate, we think the OCAW members should cooperate with local authorities who are trying to solve the crime (tampering with power lines is a Federal offense).

After all, several of the incidents in which limbs or other objects were used to disrupt power occurred in the vicinity of the strikers' tent.

Since the strikers usually have someone present at the tent at all times, it seems unusual that not one of the strikers can tell the authorities something useful about the incidents.

The strikers have said all along the issue is health and safety.

It is. The health of an elderly lady whose every breath of oxygen comes from a tank, and when the power fails, so does the oxygen.

The safety of hundreds of uninvolved people in and around Telford who travel along a road (State Route 34) where gunshots are heard every night, objects are thrown from speeding cars, and petty threats and boasts hold promise of becoming something far more serious.

It is time for the violence to stop. And with that in mind, the Herald and Tribune is offering $500 for information which leads to the arrest of the person responsible for damaging its front window.

To our readers, we pledge to continue to make every effort to seek out and tell the truth, regardless of the consequences.

Herald
and
Tribune

JONESBORO, TENNESSEE WEDNESDAY, SEPTEMBER 23, 1981

Power Failures Plague Telford, Nearby Areas

By Lois Hicks

Long periods of electric power outage have occurred at least seven times in the vicinity of State Route 34 and State Route 81 south of Jonesboro since Sept. 2, according to Allan Phipps, assistant manager of the Johnson City Power Board.

The cost of the power interuption has approached $6,000 to $7,000, Phipps said.

The power failures have occured in the vicinity of the TNS, Inc. plant in Telford and the relocated OCAW strike tent, one mile north, the power board official said.

Phipps said his linemen have removed large limbs from the power lines three times in the area of the strike tent, although there are no trees nearby.

One large transformer lcoated at the TNS, Inc. plant, but owned by the power board, was destroyed and had to be replaced when bullets were shot into it, also two other transformers had to be repaired costing a lot of money, Phipps reported.

After one of the power failures last week, a call was received by the Power Board from an unidentified person saying, "If your men step out of the truck, they will be shot," Phipps said.

The Johnson City Power Board voted last week to offer a $5,000 reward to any person furnishing information leading to the arrest and conviction of the person or persons vandalizing the board's equipment or interrupting service in the area.

County Executive Bob Goud said he has received over 100 phone calls concerning the power failures and many of the persons calling have associated the vandalism with the strike at the TNS plant.

I cannot understand the vandalism because TNS has an auxiliary power system and is not affected by the disruption, Good said.

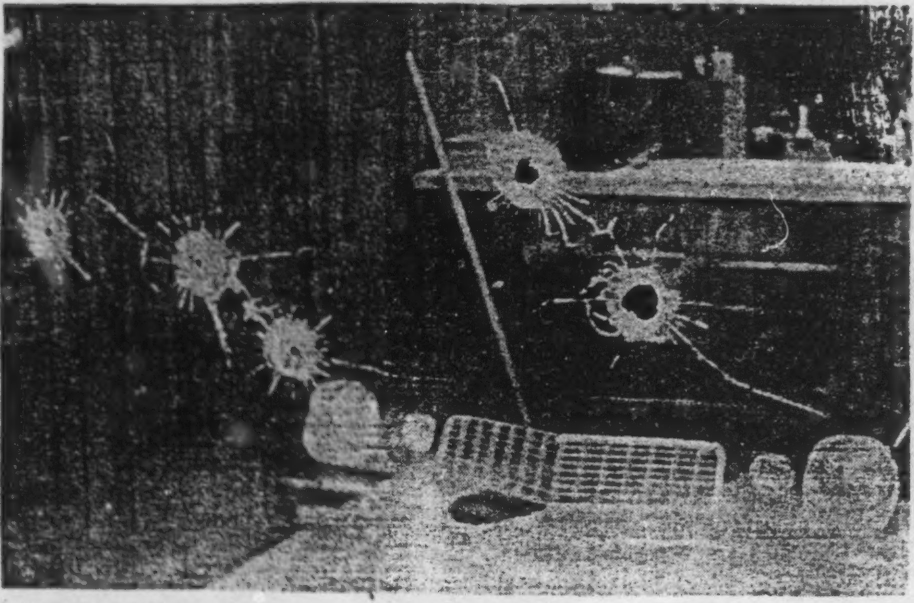
Good said he was coordinating every agency in the county and the state to prevent this kind of action in a rural community.

Vandals hit the Jonesboro *Herald and Tribune* sometime Sunday night, breaking a large plate-glass window.

Apparently two shots from a 12-gauge shotgun loaded with '00' (double-ought) ammunition were fired into the building, leaving about 14 holes in the window, walls, and breaking a framed copy of the Declaration of Independence.

Jonesboro policeman Bobby Howell, Sheriff's Deputy Dennis Garst, and County Executive Bob Good inspected the damage Monday morning.

The *Herald and Tribune* is offering a $500 reward for information leading to the conviction of the person or persons destroying the property.



The huge plate glass window in front of the Herald and Tribune was shot out sometime Sunday night by an unknown vandal. Jonesboro police and the Washington County sheriff's department are investigating the incident, and the Herald and Tribune is offering $500 for information which leads to the arrest and conviction of the party responsible. Police speculate the damage came from either a shotgun loaded with '00' buckshot or some 14 rounds of .22 magnum hollowpoint ammunition. (Photo by Lois Hicks)

JOHNSON CITY PRESS-CHRONICLE, Saturday Morning, September 19, 1981 Page 9

Power interruption brings barrage of calls

By LINDA SANDERS
P-C Jonesboro Bureau

The county executive's office has received a "barrage" of calls concerning power interruption in the county, according to Bob Good, county executive.

Good said Friday, "I am coordinating every agency we have at our disposal to counteract or prevent this kind of action in rural communities."

The Johnson City Power Board is offering a $5,000 reward for information leading to the arrest and conviction of the person or persons vandalizing the board's equipment or interruping service in the Jonesboro vicinity.

The blackouts have been going on about a month now.

Good said he has been told that sticks and limbs have been thrown across power lines causing transformers to short out.

According to the power board, the blackouts last from 20-minutes to over an hour.

Good said he has also been told the vandalism is associated with the strike at TNS Inc. near Jonesboro.

He said, though, that he did not understand the reasoning behind the vandalism because the plant is not affected by the power disruption.

"They (TNS) have an auxiliary (power) system," he said.

Good said the blackouts pose "a lot of fear and concern for residents in the area, to have a loss of power at night.

He said concern has been expressed by a great number of elderly citizens. "I also have fear that some area may be affected where someone is on a life support machine," Good said.

Good said he has also been told that a number power company employees have been receiving threatening calls concerning the repair of the line.

$\$5,000^{00}$ REWARD

The Johnson City Power Board offers a reward of $5,000.00 to any person furnishing information leading to the arrest and conviction of the person or persons guilty of vandalizing transmission lines, transformers, or other equipment of the Johnson City Power Board, or otherwise interrupting service from the Johnson City Power Board to its customers in the vicinity of State Route 34 and State Route 81 south of Jonesboro.

We regret the inconvenience the recent electric power outages in this area have caused our customers.

Johnson City Power Board
Phone: 928-2112

Roy L. Taylor,
Manager

Dr. **Schell**. If I might, let me move on to a new subject, that of hiring replacement workers for those striking employees who chose not to come back to work. We made this decision to restart operations only after much deliberation. We fully realized that such an action would cause unrest amongst the strikers and mean further hardship for their families. We went to every length possible to avoid such an event.

As one last step, we contacted the international president of the union in Denver and asked for a personal meeting to see what might be accomplished. He agreed to meet with us, and we spent a full day in Denver going over the details. He agreed to a second meeting in Tennessee, but then called back and said there was really no need to meet again, since he felt nothing could be accomplished. I point this out to emphasize we did everything we could to settle the labor dispute, short of surrendering legitimate management authority.

When it became obvious that agreement was not possible, we advertised our job openings. We received 1,553 replies. From those, we hired a permanent work force that is doing a truly fine job for TNS, the State of Tennessee, and the country.

It wasn't easy. One of the new employees had his door shot out with a shotgun blast, and this employee was the Boy Scout leader for many of our striking employees.

I am happy to report now that our production is going even better than we had hoped, and we are meeting our commitments to the Government in a healthy, safe, and effective manner.

Now I would like to respond to the specific points presented in your letter of November 16, sir.

Concerning the negotiations, since March 24, 1981, there have been 12 company-union negotiation meetings, of which 6 were with the Federal mediator. The union initially presented 90 proposals and, prior to the strike, modified its position on only 5. The company presented 40 proposals and modified its position on nearly half. The principal area of disagreement was regarding management rights.

Because this labor dispute is still unsettled, and because of the recent union action against TNS before the National Labor Relations Board, I respectfully suggest it would be inappropriate to discuss these negotiations in any greater detail.

Concerning health conditions, in response to a complaint by the union, TNS was inspected May 5 and 6 by the Division of Radiological Health of the Tennessee Department of Public Health. The report to the union said TNS action levels regarding urine samples, "appear to be in line with those utilized at other facilities within the industry. The action levels also appear to have been set at values below those levels at which hazards to employees have been shown to exist."

Last month, the Tennessee Department of Labor, Division of Occupational Safety and Health, notified TNS that an October 6 inspection showed the company to be in compliance with TOSHA regulations.

There are two principal exposures we monitor closely: the amount of external radiation received by an employee, and the amount of uranium dust particles inhaled.

Our monitoring for external radiation shows no employee exceeding the annual limit in 1979, 1980, or 1981; 1 out of 125 in 1978; and 3 out of 90 in 1977. Measurements are made through a termoluminescent dosimeter, commonly known as a TLD, worn by each TNS employee. TLD's are changed every 2 weeks and read by a certified laboratory. If the TLD reflects a high exposure, the employee is transferred to another work area to eliminate continued exposure while an investigation is conducted to verify the validity of the exposure and to establish additional controls, if necessary.

As for dust inhalation, two means of monitoring are used: analysis of uranium levels in urine and in vivo or lung scans. Since 1977, 19 employees out of a total of 563 monitored have shown urine readings exceeding the TNS action levels, and appropriate action was taken in each case. These action levels, which had been concurred with by the Tennessee Division of Radiological Health, are designed to detect, as early as possible, any trend in order to take steps to avoid health damage.

The lung scans are used to detect the presence of thorium or uranium. Of 548 scans since 1978, 5 employees exceeded the permissible level for thorium and were restricted from working with thorium until a repeat scan showed acceptable levels. No employee has had a valid scan over the uranium limit since the program began in 1978. TNS no longer processes thorium.

For the record, I would like now to submit a list of regulatory guidelines and supplementary publications used in assessing worker exposure.

Respirator usage: In December 1980 and January 1981, higher than acceptable airborne uranium dust levels were recorded in the penetrator line grinder area. Urine samples showed five grinder operators had uranium urine levels which exceeded TNS action levels, while all other TNS employees remained within limits.

It was recognized that it would take some time to define and install proper engineering controls to reduce the airborne concentrations. Four of the five grinder operators were then transferred to jobs in other work areas. The fifth operator's uranium urine level has subsequently dropped below the action level, and thus the operator was not transferred. The four operators returned to their normal work stations after their uranium urine levels had dropped to acceptable values.

Following Federal, State, and company regulations, it was judged respirators would be appropriate as a temporary solution. The mandatory respirator program was therefore instituted in late January.

However, the degree of fluctuation in the uranium urine levels indicated other factors might have contributed to higher than normal levels. In early March, it was determined the urine collection process should be changed to more fully conform with procedures suggested by the Nuclear Regulatory Commission. In late March, these new procedures were put into effect to assure the samples were meaningful and consistent. Urine uranium levels dropped dramatically, as we expected. Respirators were kept in use, since the airborne levels were still unacceptable. Based on this decline in urine levels, it was concluded that the mandatory respiratory program and the new sampling procedure was effective in demonstrating reduced employee exposures.

Concerning monitoring tests, medical checkups are required before employment. All employees working in controlled areas have in vivo examinations—lung scans—twice a year. All other personnel are given an annual scan. Urine samples are taken and tested every 2 weeks from employees working in controlled areas, and monthly from all other personnel. Samples are collected in a contamination-free lavatory at TNS on the first work day of alternate weeks. All employees wear TLD's and all production workers additionally wear finger badges.

Concerning training, we have an intensive training program for all employees, which meets National and State requirements. It includes presentation and discussion relative to the use of depleted uranium at TNS, chemical aspects of DU, route of entry into the body, radiation effects, chemical effects, fire potential and prevention, sources of exposure relative to operations, required process and production controls, administrative controls, personal protection, personal hygiene, determination of personal exposure levels, environmental sampling, records, incident and accident reporting, employee rights under the law, and respirator training and usage. This is an ongoing program which includes both classroom and on-the-job training. All employees take part in weekly safety meetings.

Concerning monitoring by the State agencies, TOSHA and RadHealth, both TOSHA and the Division of Radiological Health monitor our operations with regulations that are consistent with their national counterparts.

Three inspects at TNS have been made by TOSHA in 1980–81. In January 1980, an inspection resulted in 13 citations relative to physical safety—not health violations—and a fine of $420. In April 1980, one citation for lack of an adequate first aid program was issued. There was no fine. Inspections in January and March of this year resulted in three citations: failure to enforce use of employee hearing protection in high noise areas, employee exposure to uranium in excess of the allowable average, which TOSHA said was not considered serious because employees were wearing respirators, and an antibackflow device was not provided in a potable water system. The only fine was $520 for the noise violation. A letter TNS received from TOSHA dated November 5 reported all violations had been correct.

During the period 1970 to 1979, three inspections were conducted by RadHealth. Since 1979, there have been 6 inspections resulting in 49 deficiencies, all of which have been corrected or sufficiently answered. The last inspections were in May and October of this year. There are currently no outstanding issues of deficiencies. RadHealth does not invoke any fines.

It should be noted that in addition to TOSHA and RadHealth inspections, TNS has an extensive program of self-inspection and audit to provide improvements beyond what might be expected from the governmental agencies. The environmental health and safety staff is composed of well-trained professionals in this field.

In conclusion, Mr. Chairman, I know certain members of your staff are planning to visit TNS next week. I would like to personally invite you and your subcommittee to also visit with us at Tennessee and see things for yourself.

Thank you very much.

Mr. **Gore**. Thank you, Dr. Schell.

There's been a long dispute between you, the management of the company, and the former employees now on strike, who have been replaced by you, about whether or not there is a health problem. I'd like to ask the staff to provide for you now, and without objection we'll put into the record of this hearing, a consultant's report which you contracted for about 10 days or 2 weeks after the strike began.

Now, you cite in your testimony an inspection by Tennessee on May 5 and 6 which you believe constitutes evidence that there was no particular safety and health hazard, yet 1 week later your own consultant conducted a rather extensive inspection of the plant, at your request, and what they found is contained in this document.

Now, to summarize it, they found, quote: "A lack of management commitment to a radiation safety program." They said, quote: "We observed many areas of noncompliance. These, coupled with the past history of whole body and extremity overexposure, should be of great concern to management."

They found air samples showing concentrations as much as five times the maximum permissible concentrations. They said, "There is an immediate need to correct the high airborne problem by engineering means. Management does not plan to correct this immediately, but to wait." They go on to say that months will be required, and that there would be no assurance that the problem would be alleviated by what management planned to do. "Time-wise, this is not acceptable," end quote, from your own consultant.

They found a lack of monitoring for beta radiation. They found five areas with excess U-238 concentrations. They found an inadequate policy governing respirators, inadequate medical surveillance for the use of respirators, lack of an adequate training program, inadequate fitting, use, cleaning, storage, inspection, quality assurance, and maintenance of equipment. They found that you were asking, quote, "too much to expect," end quote of your employees to work 40 hours a week in respirators around 100 degree temperatures.

They found an inadequate method for determining the surface dose rate from the metal they were holding. They found no personnel contamination monitor in the change area, and an effluent sample five times higher than the allowable release concentrations. They found an unsatisfactory method of measuring the dose to the hands and fingers of your employees that were required to directly handle the metal on a continuous basis. They found a, quote, "very sketchy and poorly documented training program," survey meters that had not been calibrated and were not calibrated on a regular basis, violations of the license and use of protective clothing in respirators. They found that there were no clear lines of responsibility, that no one was clearly designated as the person to see to it that health and safety plans were adhered to, a ventilation system poorly designed, leaks in the duct work, et cetera, et cetera, et cetera, ending up with a plea for the management to support efforts to protect health and safety.

Now, in light of this internal company document which you had 1 week or 2 weeks after the strike began, how can you continue to insist that there were no significant health and safety problems?

Dr. SCHELL. My general response to that, sir, is one has to understand the difference between significant and insignificant.

Getting back to the consultant's report itself, that was an internal audit report made in 1 day in a walk-through manner, at our request, to assist us in doing what we felt we had to do as a part of our overall job, which is to see to the health and safety of the worker. It doesn't necessarily mean that we accept carte blanche all of the recommendations or comments that can be acquired in 1 day by an outside consultant as being accurate, No. 1, or even being justified, No. 2. The consultant's report is just that, a report, which can be debated.

Mr. GORE. Who decided to hire this particular consultant? Was that your decision or the home office's decision?

Dr. SCHELL. It was the home office's decision.

Mr. GORE. Did they make a poor choice of consultant? Did they choose someone who was unqualified?

Dr. SCHELL. Not in my opinion.

Mr. GORE. Did they choose someone who was well qualified?

Dr. SCHELL. Yes, sir.

Mr. GORE. Well, why don't you agree with his conclusions?

Dr. SCHELL. I don't disagree with all of his conclusions. I would in principle disagree with the general statement that management is unconcerned about the health and safety.

Let me make a general comment about the observations. We brought them in, Radiation Management Corp., and did not explain to them what we have been doing in the past. It was, "Take a look at what we're doing," without attempting to preclude their thinking relative to what was happening in the plant or what wasn't happening in the plant. There are a lot of operations that go on in preparing to improve something or in putting something into place that would not be obvious to them unless it were pointed out. We chose not to do that so that we would not cloud what we purposely had them in there to do.

Mr. GORE. You asked them for an objective assessment?

Dr. SCHELL. Objective audit.

Mr. GORE. Here you had this long dispute with the union, the union was on strike, the very first health and safety strike in the United States, you had the dispute with your employees, and so you asked an independent consultant to come in and give you an objective analysis of whether there were problems or not, and they come back with this report that is an indictment of your health and safety practices validating what the union people were telling you.

Now, what I don't understand is your company has a pretty good reputation. We've asked around and people speak highly of your company, generally speaking. But I don't understand why, after this bitter dispute with the union about health and safety matters—when you got this report, I don't understand why you wouldn't have gone to the union and said, "We were wrong. You were right. We want to sit down with you and try to work these problems out." Instead, you kept this secret, refused to give it to the employees when they asked to see it, refused even to give it to the Occupational Safety and Health Administrators in Tennessee and in the United States when they asked you for it, and continued to insist that the problems were imaginary, when your own consultant said they were real.

Dr. SCHELL. Sir, the observations made by the consultant were made in a one-shot, one-day observation. Many, if not most, of the items mentioned in that report had been worked on since before I even was placed in this position. In order to define, design, install pieces of equipment, it doesn't happen overnight. You have to start sometime, and it takes *x* amount of time to get that accomplished and get those pieces of equipment installed. That was in the process of happening. It was shortly after the strike began that many of the improvements were put in place in that facility, coincidental with the time.

Mr. GORE. They reviewed your plans for abating the airborne dust problem, and they said that there was an immediate need to correct the high airborne dust problem by engineering means, and they reviewed your plan to correct it by waiting until it was more profitable to put in a different kind of processing operation, and in the meantime force your employees to work months, 8 hours a day, 40 hours a week, temperatures as high as 100 degrees Fahrenheit, where they were continuing even with the respirators to get doses of this substance that exceeded the permissible levels, or at least the NRC guidelines. Now, maybe that's what led them to conclude that there was no management commitment to health and safety. Why would they conclude there was no management commitment to health and safety?

Dr. SCHELL. I cannot speak for them. I can tell you, quite honestly, I am just personally committed to the best possible health and safety program that we can possibly have in place there, and as far as I'm concerned, we have one in which we can be proud. We had one before the strike began in which we could be proud.

We had utilized our own research and development sources to improve the manufacturing operation in this particular instance that the consultant's report is speaking to concerning the fabrication of penetrators. We were utilizing R. & D. sources to eliminate dust, if you will, at its source in the manufacturing process and not just to control dust as it's generated. That was being done out at the California facility.

Mr. GORE. Well, now, we talked with officers from Aerojet Corp. who admitted to the subcommittee staff that many aspects of the health and safety practices were substandard at the time of the labor talks, and further explained that these were alleviated during July and August, just prior to your plant going back into operation. Is that correct? Did you make a number of changes on the basis of the consultant's report just prior to putting the plant back into operation?

Dr. SCHELL. No, sir. As far as I'm concerned, the report did not expose anything new that we did not already know about and had already taken action on.

Mr. GORE. Dr. O'Brien, were you not interviewed by the subcommittee staff, and did you not make that statement, that you agreed that many aspects of the health and safety practices were substandard at the time of the labor talks and that those were alleviated during July and August, just prior to the plant going back into operation?

Mr. O'BRIEN. Yes, sir, I made that statement.

Mr. GORE. Well, Dr. Schell just disagreed with your statement.

Mr. O'BRIEN. No. No, he said that those corrective actions were not made in response to what this report said.

Mr. GORE. Oh. But you agree that the health and safety practices were substandard at the time of the labor negotiations?

Mr. O'BRIEN. Yes, sir.

Mr. GORE. Well, why didn't you call the labor people back in and admit that you were wrong and that they were right? I don't understand that.

Mr. O'BRIEN. Let me explain, Congressman. The health and safety policies and procedures in this plant were reviewed by Radiation Management Corp., as well as the practices. They're primarily by looking at the plant and interviewing plant personnel. It was not an ideal program. There were numerous deficiencies, but I'll warrant you, I can go into any industrial concern—I can go into Oak Ridge National Laboratory—in fact, I've done that, done an objective review of them, and I understand you've just completed one, and found many, many deficiencies in their program. That doesn't mean it was a bad program. That means there are many details of their program that could and should be improved.

All of the deficiencies that we identified—as a matter of fact, I specifically requested an opinion on this from John Davis, who wrote this report—every one of the deficiencies he points is a relatively minor problem, and the cumulative effect of those relatively minor problems is also relatively minor from the standpoint of actual health protection.

Mr. GORE. Would you say a lack of a management commitment to radiation safety is a minor problem?

Mr. O'BRIEN. There was no lack of management commitment.

Mr. GORE. Why did your consultant say there was?

Mr. O'BRIEN. Because there was not a document that spelled out the management commitment. That's the problem.

Mr. GORE. That's not what he said. He said there was a lack of a management commitment. Now, he says, "The health physics staff seems to be capable and is working to improve the program. However, plant management has to support these changes and has to pay strict attention to the program." And plant management was waiting until it was more profitable to make changes in a longer term, slower way, and forced the employeed to endure unacceptable conditions while you waited until it was more profitable to do it a different way.

Dr. SCHELL. No, sir. To do R. & D. in both places at the same time doesn't make any sense. R. & D., in order to improve the manufacturing process of which we're speaking about here—and this is just in the penetrator shop—was best performed out in California, which is where it was done. That program is still underway. It was recognized that that was the long-term solution to the problem, not to keep everybody in respirators. That was never our intent. It was a temporary solution.

Mr. **Gore**. Well, you know, the key to this thing is that the employees there had the guts to stand up on health and safety grounds. You had a serious problem there, in my opinion, and you got this consultant's report, which confirmed it, then you took actions to try to solve the problems. If that was all that had happened, then we could learn from the past and move forward. But the people who had the guts to put their jobs on the line, who were proven right, are still out of work, and they have suffered an injustice, and they continue to suffer an injustice, and I just wish that you could see that.

You know, they have a hard time keeping up with these standards and the scientific evidence. If they had known that there was a document in the company files that proved what they were saying, the situation would have looked completely different, don't you think?

Dr. **Schell**. Sir, the union did not present the health and safety issue until at least a week prior to the strike beginning as a significant item over which the strike——

Mr. **Gore**. Did they present health and safety concerns with you during the negotiations?

Dr. **Schell**. In general discussions, with much less emphasis on that than on management rights and——

Mr. **Gore**. Well, it was a matter of emphasis, then, in your opinion, but they did present those concerns, right?

Dr. **Schell**. Not to any significant degree, compared to the other items.

Mr. **Gore**. They did present the concerns throughout the negotiations, didn't they?

Dr. **Schell**. Yes, sir.

Mr. **Gore**. All right. Now, they had the so-called—what did you call it?—the opening rights or the presentation rights as the negotiations began, is that right?

Dr. **Schell**. That is correct.

Mr. **Gore**. So they spoke first, right, when they had the presentation rights, and in their presentation they raised health and safety concerns, is that correct?

Dr. **Schell**. Could you excuse me one second, sir?

Mr. **Gore**. Sure.

Dr. **Schell**. Excuse me, Mr. Chairman. I was not at the negotiations at the opening session, so I really cannot speak directly to whether they did or did not in their opening presentation.

Mr. **Gore**. Oh, I thought you said a minute ago that they didn't even raise the health and safety concerns.

Dr. **Schell**. As the information was presented to me through my negotiating committee, it was not the most significant item raised by——

Mr. **Gore**. But we heard testimony from people who were there who said this was their main concern, and their formal presentation centered on health and safety concerns, and in fact you reached agreement on all the economic issues, didn't you?

Dr. **Schell**. On the economic issues, yes.

Mr. **Gore**. Well, they continued to strike. What did you think they were striking about?

Dr. **Schell**. Over management rights.

Mr. **Gore**. Management rights? They were striking over health and safety, they say, and I have yet to see any credible evidence to challenge that.

I'll come back for other questions. I apologize to my colleague for taking so much time, but I am forced to conclude that prior to the time of this consultant's report, at least, you viewed the employees in the nature of another raw material in the production process, and so long as you could get by with lax inspections not holding you accountable, you were willing to do so.

Dr. **Schell**. No, sir.

Mr. **Gore**. Mr. Shamansky?

Mr. **Shamansky**. Thank you, Mr. Chairman.

Dr. Schell, I should just identify my background. I'm a business lawyer, and I don't want to pussyfoot around here. I think you serve your company very badly with this testimony. I think it's condemning of your regime there, with your running this company, otherwise you have no business being here.

Now, you keep stressing you were concerned about management rights and management authority, which gets down to, apparently, the right for you to establish what the so-called health standards are. Now, you've sat here and impeached the validity of your own consultant. If it was just a walk-through, why do it? Certainly the company, your superiors, knew what they were buying when they bought this particular inspection, and you have sat here and condemned it thoroughly.

Now, what I infer from your testimony is that management rights means that the employees have nothing to say about the standards which you're maintaining. All of the conditions which were found by this consultant existed prior to the time that they came in, and which is the subject of what the testimony was by your own employees.

Now, I would like you to define for me—maybe I misunderstood what you mean by management rights or management authority. What are you talking about in this sacred preserve that these people don't have a right to get into? Would you enlighten me?

Dr. **Schell**. First of all, let me state that we do not set the standards. We attempt to operate our plant within the standards set by somebody else.

Mr. **Shamansky**. Thank you for telling me. Now, would you respond to my question?

Dr. **Schell**. Yes, sir. Management rights in general involve productivity, who does what, how much of it, and the imposition of and the application of health and safety programs, and that is a management right. It's a management duty to perform just that a define that such that it does meet the standards.

Mr. **Shamansky**. And it's your contention that management rights still require you to ignore, as you've just done, or to dismiss the findings of the consultant— because they only walked through 1 day, correct?

Dr. **Schell**. That is correct.

Mr. **Shamansky**. And that therefore it had no validity?

Dr. **Schell**. No, sir, I did not say it didn't have any validity.

Mr. **Shamansky**. Well, then would you please tell me what validity it has?

Dr. SCHELL. It had some validity.

Mr. SHAMANSKY. And you have taken, then, steps to perhaps correct the conditions pointed out, is that right?

Dr. SCHELL. The conditions that were commented on in that report almost in their entirety had already begun to be corrected or improved upon.

Mr. SHAMANSKY. But were they corrected—now, look, sir——

Dr. SCHELL. They were not corrected at the time they conducted the analysis.

Mr. SHAMANSKY [continuing]. That you said had begun—to begin something and to do it are far different, right?

Dr. SCHELL. Yes, sir.

Mr. SHAMANSKY. All right. So in the meantime, when your own consultant came through, the conditions about which we had testimony from your employees, those conditions still existed, is that correct?

Dr. SCHELL. Some of them did; some of them had——

Mr. SHAMANSKY. Some of them did. Well, let me put it this way: Are you saying that this report is not true?

Dr. SCHELL. I'm not saying that it is not true. It is——

Mr. SHAMANSKY. Well, did it or did it——

Mr. GORE. Let's let the witness respond.

Mr. SHAMANSKY. All right.

Mr. GORE. The question was: Are you saying that the report is not true?

Dr. SCHELL. No, I'm not saying the report is not true. There are inaccuracies in that report. They are based on their own observations, which can be misleading, depending on what they see, because they did not see an operating plant.

Mr. SHAMANSKY. Well, sir, may I ask a question? I've gathered here that when your—you've testified yourself that you didn't see all of these things, either. They were reported to you, correct?

Dr. SCHELL. That's correct, but I've also been out in the shop.

Mr. SHAMANSKY. I see. But still you did say in your own testimony that you didn't see all these things that you're testifying to; it was reported to you?

Dr. SCHELL. That is correct.

Mr. SHAMANSKY. All right. But at least this report is going through and saying what they themselve saw. Are you denying that?

Dr. SCHELL. No, I am not denying that.

Mr. SHAMANSKY. OK, so to that extent, this was direct testimony based on the report to you, as distinguished from some of your testimony.

Dr. SCHELL. Fine.

Mr. SHAMANSKY. OK. Now, with respect to—you have repeated your personal commitment to the health and safety of the workers. Is your division profitable, in general terms?

Dr. SCHELL. That's competitive, sensitive information, but, of course.

Mr. SHAMANSKY. Yes. And what was the basis for your reluctance to address with the workers and then to implement the changes that you say were effected as a result of the report, that you wouldn't have been willing to do because of this management authority or prerogative, when the workers raise the same issues?

Dr. **Schell**. We had a management/union safety committee before the strike began, and we discussed many of these issues with them.

Mr. **Shamansky**. I understand you discussed them, but you didn't do anything about it, and it precipitated a strike. Now, the fact that you had a committee—pardon?

Dr. **Schell**. I think the record will show that we did do many things about it.

Mr. **Shamansky**. Pardon?

Dr. **Schell**. I think the record would show that many things were done.

Mr. **Shamansky**. But many things remained; otherwise, the consultant wouldn't have found these things. Let's just deal with what the consultant found. These things existed after the strike had begun, correct? Can we agree on that?

Dr. **Schell**. That was their observation as to——

Mr. **Shamansky**. I understand. But you hired them.

Dr. **Schell**. Yes, sir.

Mr. **Shamansky**. All right, the union didn't hire them. They're your people, not mine. All right. So therefore these issues were raised, based on the testimony here, by the workers to the different levels of your management. Are you saying that the managers did not filter that stuff up to you? Were you aware of these complaints, as manager? You're the manager. Were you aware of these things?

Dr. **Schell**. I was aware of the issues addressed in this report, yes, sir.

Mr. **Shamansky**. You were aware?

Dr. **Schell**. Yes.

Mr. **Shamansky**. And nevertheless you had to wait until these people came in to do something about it?

Dr. **Schell**. No, sir.

Mr. **Shamansky**. You had begun an effective, active campaign to correct these things?

Dr. **Schell**. Yes, sir.

Mr. **Shamansky**. Now, may I ask you this: In dealing with the union, why didn't you address yourself to that?

Dr. **Schell**. We did.

Mr. **Shamansky**. You did. So in other words, the union just misunderstood all of this?

Dr. **Schell**. I don't know. I can't answer for the union.

Mr. **Shamansky**. OK. I don't mind telling you, sir, I find that incredible.

Mr. Chairman?

Mr. **Gore**. All right. I want to recognize counsel for the minority. Before doing so, let me just briefly clear up one thing, this issue of management rights.

Now, your position is that the union was being unreasonable because it was trying to take over the legitimate prerogatives of management, is that right?

Dr. **Schell**. That is correct.

Mr. **Gore**. Now, there were four elements of that concern, as I understand them, and I want you to correct me if I'm wrong. One was the company's proposal that the probation period be extended from 90 days to 6 months, correct, and the union didn't want that to happen and you regarded that as an encroachment on management's prerogatives?

Dr. **Schell**. I believe that detail is correct. However, I'll also submit that the whole subject of the negotiations is——

Mr. **Gore**. Is in the NLRB right now, and I don't want to draw you into an extensive discussion of your position there, but let me just note that the point I'm trying to make is that that is directly related to the health and safety concerns, because if you can hire people for the hot spots in the plant for a 6-month probation period, then you can just recycle new employees through the most hazardous parts of the operation, and when they get a high exposure level, fire them without any problem because they're still on probation, and hire somebody new. Your own testimony indicated that when you tried to replace the people on strike, 100 of them, you had 1,500 applications for the jobs.

A second item in this category was a 10-day layoff without regard to seniority. The union wanted the company to specify that such a layoff policy would not be used to lay off overexposed workers, and again manage the overexposure problem at the expense of the employees. In other words, shift the burden to the employees.

Third, a proposal by the company to have indefinite, inactive layoff for medical reasons. Again, the union wanted the company to specify that radiation overexposure would not constitute reasons for inactive layoffs so, again, the company couldn't shift the burden to the employees of the radiation hazard.

And, finally, the proposal that the union be allowed to participate in the health and safety program.

Now, unless I'm wrong, those four items make up the core of the company's charge that the union was trying to take over management rights. Is that——

Dr. **Schell**. No, sir, I would disagree with that. There were many other issues at hand over which we were unable to reach agreement with the union. Let me say at the outset that there is certainly no intent on the part of myself personally or management to impose punitive measures to accommodate a work situation of cycling people in and out of the plant. From just a general business point of view, that has to be a very inefficient way of running a plant, cycling people through a plant, retraining them.

Mr. **Gore**. What do you think about wearing a respirator in front of a 117-degree furnace 40 hours a week? Would you describe that as punitive?

Dr. **Schell**. No, sir, they did not have to wear a respirator in front of a 117-degree furnace. They did have to wear respirators in the penetrator grinder area, which is only one area of the grinder shop, in a mandatory 8-hour-a-day situation, and, no, I was not happy with that and we did not intend for that to go on forever.

Mr. **Gore**. Well, do you think it was reasonable to ask employees to do hard physical labor 40 hours a week in a respirator for 4 months? Do you think that was reasonable?

Dr. **Schell**. Yes, sir, I do, or I wouldn't have done it.

Mr. **Gore**. All right.

Mr. **Shamansky**. Will the gentleman yield?

Mr. O'Brien. Can I respond to that question?

Mr. Gore. Yes.

Mr. O'Brien. These operators sit at their machines. They're not under hard manual labor. The situation was not a desirable one, but it was not an intolerable one at all. I've worn a respirator 8 hours a day for many days.

Mr. Gore. Did you check to see whether the respirators were effective or not, Dr. O'Brien? Did the company?

Mr. O'Brien. Yes, I think part of his testimony responded to that. We did have some initial disappointment that the reduction in urinalysis results were not as great as we expected them to be when we implemented the respirator program. However, later on, when we went to appropriate sample collection, as specified by the regulatory guide that's already been used as a reference today, they did drop to the levels that we expected them to drop to. So, yes, we did and they did work.

Mr. Gore. Well, they did work. All right. Now, let me ask the staff to give you a document that was provided by Dr. Nelson subsequent to his review of the company's health records. This is entitled "Respirator Use and Urine Uranium Concentrations." It's in appendix C.

Now, employee No. 11 at the top was wearing a respirator, and the first sample showed 140 micrograms per liter. That's above the company's action level, and almost five times the NRC guideline. The next one, two, three, four, five, six, seven samples in a row at 2-week intervals over the next 14 weeks, this fellow was above the company's guideline, much less the NRC guidelines. Wouldn't that lead you to believe that the respirator wasn't working?

Mr. O'Brien. No. No, sir.

Mr. Gore. Well, why not?

Mr. O'Brien. Because a lot of these employees did not wear their respirators at all the times that they were supposed to wear them. In fact, I personally saw employees working at machines with their respirators hanging around their necks.

Mr. Gore. Did you ask them to put them on?

Mr. O'Brien. I didn't, but I asked their supervision why they were doing that, and he went over and told them to put them on.

Mr. Gore. Well, that's just at variance with what the union people testified.

Look at employee No. 14. He's wearing a respirator, and in the second sample he had 130 micrograms per liter. That's above the company's action level. The next sample two weeks later is above the company's notice level. The next one is above the NRC level. The next two are above the company's level.

Mr. O'Brien. Let's talk about those levels a minute. I think those have been misrepresented, too.

Mr. Gore. Yes, a lot of people think they're way too high and ought to be revised downward.

Mr. O'Brien. This regulatory guide that was referred to today is not in effect. It's out for comment, has not been finalized. The guidance that we're working to is guidance that was established in the Army's DARCOM manual for uranium, and these are not mandatory numbers, but they give numbers of 100, and that's what our action guide is, is 100. They say there's no hazard below 250.

Mr. **Gore**. Now, that depends, doesn't it, whether it's the soluble or insoluble, whether it's the Friday evening sample or the Monday morning sample?

Mr. O'**Brien**. It does. Certainly, it does, and you've got to recognize also that what we're talking about in the DARCOM manual is depleted uranium. What we're talking about here is not depleted uranium. This is natural uranium.

Mr. **Gore**. Well, it seems that nobody can be trusted from the company's point of view. The union is coming up with imaginary complaints from your point of view. The standards are unreasonable. The Army standards are open to dispute. And even your own consultant that you paid with your own money can't really be trusted because he just did a walkthrough.

Mr. O'**Brien**. That's not true at all, sir. That's not at all true. I've visited the plant in the company of this consultant, have gone through on a 2-day tour with him—this was after this report was written—we've gone over every single item in his recommendations, and I've gotten from him personally a statement that, hey, none of these things are serious. What they are is a number of things that you should fix, and I say I know that. We are fixing them. We're going about fixing those. We both agree on what this report says and what it means. I know what it means and so does he, the consultant who wrote it, and it's been blown completely out of perspective today, I believe, by making it sound like these are all very serious allegations, and they really aren't.

The health and safety program—they have good health and safety people, and it's been a fairly good program. It's not in detailed compliance like it should be, and I can make up a lot of different additional things that probably need to be done better than they are, but it's not that bad.

Mr. **Gore**. Dr. O'Brien, we're going to have scientific witnesses to talk about the nature of the standards, and we would invite you to stay and rebut testimony, if you wish, to scientific witnesses, but I can't agree that the charges are not serious in the consultant's report, and I'm sure you would agree that the charge that there was no management commitment to radiation safety is an extremely serious charge, wouldn't you?

Mr. O'**Brien**. It's a serious charge, but it's untrue. That's the point.

Mr. **Gore**. Well, in other words, as I said before, your consultant can't be believed, either?

Mr. O'**Brien**. No. No.

Mr. **Gore**. He made an untrue statement in his report?

Mr. O'**Brien**. No, his comment was made on the basis that there wasn't a written policy statement. That was the sole basis for that comment.

Mr. **Gore**. That's not what the report says.

Mr. O'**Brien**. I'm sorry, but that's what John Davis says, Mr. Chairman.

Mr. **Gore**. Well, that's not what he wrote. He said a lack of management commitment.

I will yield to my colleague.

Mr. **Shamansky**. Doctor, I'm fascinated by your testimony. You went through the plant and these men are sitting at the machines and they didn't have the respirators, but they should have had the respirators on, and that was because the supervisors weren't requiring them to have it on, so you had to tell the supervisor to get the masks on, right?

Mr. O'BRIEN. Yes, that's right.

Mr. SHAMANSKY. OK. What kind of management procedure is that?

Mr. O'BRIEN. Now, wait a minute. Wait a minute. The supervisor doesn't stand there and watch those men at all times. We walked into the room, and here are these guys sitting at the machines, and four out of the five had respirators on and one didn't.

Mr. SHAMANSKY. Then how often did you go back to see that that was an aberration, as opposed to sort of a usual sort of thing?

Mr. O'BRIEN. I did not try to follow up on that.

Mr. SHAMANSKY. I see.

Mr. O'BRIEN. I asked them if this was a common circumstannce, and they said, "Yes, we come into the room and find them not wearing the respirators frequently."

Mr. SHAMANSKY. That's the only time you ever saw someone?

Mr. O'BRIEN. That's the only time I ever saw it.

Mr. SHAMANSKY. Because it came up—the reason I'm making a point of this is that you made a point where you were trying to prove that they didn't sit there all day long with it.

Mr. O'BRIEN. Oh, wait a minute. I didn't finish my testimony on that. They don't work in the hot areas, the high temperature areas or the high labor areas, with respirators on.

Mr. SHAMANSKY. I see. I just want to make one other comment, and this is to Mr. Dennis, who is not counsel and he's not sworn and this and that, but I want to respond very frankly, Dr. Schell, to your business about the violence from the union, which I consider to be total red herring testimony, irrelevant to this issue here. To try to justify your action, the company's actions, with respect to health because of violence by the union, there is simply no connection. It's a red herring, and I think you hurt your case by bringing it in.

I yield.

Mr. GORE. I recognize minority counsel, Mr. Clement.

Mr. CLEMENT. Thank you, Mr. Chairman.

I would possibly suggest, Mr. Chairman, from all the discussion we've had on the Radiation Management Corp. report, that it might be appropriate for the committee to direct a letter to RMC and ask for their additional comments in context with the discussion here today, as to exactly what their statements in the report meant.

Mr. GORE. Well, I'll be happy to entertain that suggestion. I think that the report does speak for itself, but certainly I think that's a useful suggestion, and I have no objection to it.

Mr. CLEMENT. Thank you, Mr. Chairman.

Dr. Schell, there were several things that I thought perhaps we might want to put into context here. We have heard testimony from the union that indicated that this strike was called solely on health and safety grounds. Let me ask you, during the negotiations preceding the current strike, could you give us a more specific idea of what issues were discussed?

Dr. SCHELL. No. 1, I was not at the negotiations, so I have to tell you what my negotiating committee would tell me. The basic elements of discussion would involve virtually everything other than health and safety as the primary issue, whether it was vacations, holidays, a layoff period, a probationary period, the imposition or lack of imposition of production standards, things of that nature, Mr. Clement.

Mr. CLEMENT. If you were going to attempt to rank the issues in a priority order, where would health and safety seem to fit to you as the union perceived it?

Dr. SCHELL. Last.

Mr. CLEMENT. At any time did the union request access for Dr. Nelson or other scientific personnel to the plant?

Dr. SCHELL. Prior to the strike?

Mr. CLEMENT. Yes, prior to the strike.

Dr. SCHELL. No, sir.

Mr. CLEMENT. All right, there was no request for any union scientific representative to enter the plant before the strike actually began?

Dr. SCHELL. Correct. To the best of my knowledge, that is true.

Mr. CLEMENT. Were there any occasions prior to the strike that the union requested health and safety records from the company?

Dr. SCHELL. No, they did not.

Mr. CLEMENT. Not to your knowledge?

Dr. SCHELL. Not to my knowledge.

Mr. CLEMENT. Have such records been requested subsequent to the strike?

Dr. SCHELL. Yes, sir.

Mr. CLEMENT. And a request for access to the plant has been made subsequent to the strike for Dr. Nelson or other scientific personnel?

Dr. SCHELL. Not officially, but I do know that that was—at least, my understanding of it was that it was not officially on a piece of paper.

Mr. CLEMENT. All right, that was after the strike?

Dr. SCHELL. After the strike, yes, sir.

Mr. CLEMENT. All right, thank you.

We've had a lot of discussion about the respirators. Let me ask you, exactly how many people are we talking about in the penetrator grinder area that had to wear these respirators?

Dr. SCHELL. Five per shift, so normally 15 and——

Mr. CLEMENT. Out of a total work force of how many?

Dr. SCHELL. At that time 95, or actually it was over 100 during that early part of the year.

Mr. CLEMENT. All right, so less than 15 percent of the work force had to wear the respirators?

Dr. SCHELL. In a mandatory 8-hour-a-day situation, yes, sir.

Mr. CLEMENT. Thank you.

There was also some earlier testimony regarding your safety training classes that apparently are held on a regular basis. Do you maintain attendance records on this training?

Dr. SCHELL. Yes, sir, although I cannot confirm that that was done prior to the strike. I just don't know the answer to that question. Certainly, now we do.

Mr. CLEMENT. Is it correct to state that if an employee signs a class roster for one of these sessions, it indicates that that employee was in attendance during the session?

Dr. SCHELL. I'm sorry, sir. Would you repeat that?

Mr. CLEMENT. All right. One of the earlier witnesses indicated that apparently you maintain some sort of a roster that the employees have to sign to indicate that they attended the training session, is that correct?

Dr. SCHELL. I believe that was true.

Mr. CLEMENT. Have you ever received complaints from the union or any of government agencies charged with overseeing you as a licensee on the procedure used, or the fact that these signatures are not valid?

Dr. SCHELL. No, sir, not that I'm aware of.

Mr. CLEMENT. My final question would be: Has the company taken steps to correct the health and safety deficiencies in the OSHA findings and the BurRad findings or in your consultant's report?

Dr. SCHELL. Yes, sir.

Mr. CLEMENT. Thank you very much, Mr. Chairman. No further questions.

Mr. GORE. All right. Dr. O'Brien, are you familiar with Dr. Paul E. Morrow, professor of radiation biology and biophysics and of pharmacology and toxicology at the University of Rochester?

Mr. O'BRIEN. No.

Mr. GORE. We are informed that he is one of the leading experts in this field, and I invite your challenge to his credentials for the record, if you want.

Mr. O'BRIEN. By the way, Congressman——

Mr. GORE. Yes?

Mr. O'BRIEN. I'd like to express my appreciation for the honor of making me a doctor, but I'm just a mister.

Mr. GORE. I'm sorry. Mr. O'Brien. OK., what is your title now?

Mr. O'BRIEN. I'm the director of environmental affairs and safety for Aerojet General Corp.

Mr. GORE. All right. I wanted to make sure I had that right, too.

We asked Dr. Morrow, one of the two or three leading experts in the entire country in this field, to review the health and safety records, the urine samples, all of the information that we had available, and he concluded, and I quote, "The plant operating practices described generally are atrocious when viewed from a commonsense industrial hygiene perspective," end quote. "Exposure conditions have been excessive for at least 2 years." And he also noted, quote: 'The thorium operation was evidently a bizarrely run operation."

Do you have a response to that?

Mr. O'BRIEN. No, sir, I don't. The thorium operation, particularly, was shut down before I came to work for Aerojet.

Mr. GORE. Which was at what time?

Mr. O'BRIEN. I came to work in June of 1980.

Mr. GORE. OK, now the thorium operation was where Mr. Patton, who was referred to earlier, had been working?

Mr. O'BRIEN. Yes.

Mr. **Gore**. Without objection, I'd like to put Dr. Morrow's entire statement into the record at this point. We had hoped he could be with us, but there was an obstacle to that.

[Prepared statements of Dr. Marrow follows.]

Statement from P.E. Morrow, Ph.D./Prof. of Radiation Biology and Biophysics and of Pharmacology and Toxicology

UF_4 the raw material was compared in its acute and chronic toxicity in the Uranium Monograph (Voegtlin and Hodge, 1949) and clearly it was portrayed as close to UO_2 in its general effectiveness. However some summaries, e.g. page 1300 vs 1306, and some tabulations, e.g., Table 21.81 show UF_4 to be effective (e.g. renal injury) at somewhat lower doses than UO_2 (factor 27), but still substantially less effective that the U^{+6} compounds, uranyl nitrate and uranyl fluoride (UO_2F_2), the latter being the more toxic compound investigated in those studies.

In the Introduction of Part I. of the Monograph, Hodge reviewed the chemistry of the uranium compounds. He states . . . "The compound UF_4 is known commercially as "green salt"; as commercially handled it usually contains 1 percent or more of uranyl fluoride, UO_2F_2, which is a pale yellow material." (Emphasis added.) Thus it is possible, as in many uranium operations, that the dominant chemical form of uranium contains varying, lesser amounts of other chemical forms of uranium, some of which can constitute the toxicologic limitation for the operation. Thus, UO_3 can account for urinary uranium levels in some U^{+4} operations where the main uranium component could not (Morrow et al. 1972). If UO_2F_2 occurs in the UF_4 raw material, immediately the basis for the urinary uranium levels seen in the TNS workers becomes different and more understandable. That such urinary levels arrive directly and completely from UF_4 is both unexpected and unreasonable based on extant UF_4 studies.

The liquid black used for the graphite plots (1.1 Small Derby Shop) probably contains organic solvent-vehicle which should be identified and controlled.

The "blow out" phenomenon which results in uranium dust and fumes needs a physio-chemical characterization. While the main reducing reaction between Ca $Mg(CO_3)_2$ and UF_4 can be anticipated, these are undoubtedly intermediates eg fluorides, carbonates, carbides and oxides, which could constitute a special exposure circumstance.

The plant operating practices described (cf 2 Large Derby, Crucible Ass'y, etc) generally are atrocious, when viewed from a common-sense, industrial hygiene perspective.

The thorium operation is incompletely described, but it was evidently a bizarrely-run operation as well. Its stoppage was sensible.

In section 10A, Urine Monitoring, the description begins with a statement of uncertainty. What is the relationship between activity and mass of uranium? Natural uranium contains 0.0055 percent U-234, 0.72 percent U-235 and 99.274 percent U-238. At the time that the U standards were made, a μCi of natural uranium was defined as 7.5×10^4 alpha d/sec and equal to 3 g U. This was based on the definition of a Special Curie inasmuch as it had twice the d/sec as the true Curie. Thus 3.7×10^4 alpha d/sec is a true microcurie. Depleted uranium normally connotes ~ 0.5 percent U-235 or thereabouts, but the protection criteria for natural uranium applies (Spoor and Hursh 1973).

When reference is made to counts in the urine, nothing quantitative can be determined. The efficiency of their counting is, of course, the missing information. Respirators - cartridge: Unclear what this respirator was and how effective it might have been - know nothing of the environmental dust levels, nor their particle size nor chemical form. Virtually useless information provided, therefore.

In relation to 30 μg U l^{-1} urinary levels, one can certainly comment. While the original basis for this level is somewhat tenous, it was by no means established that such excretion levels were injurious. They were to be avoided because the exposure would be estimated as close to or exceeding the exposure limits for "soluble" uranium compounds, which are interpreted as U^{+6} compounds. Hence, if uncontaminated urine specimens have been regularly collected with this U level (and higher U concentrations), prudence should have demanded that a definitive investigation occur in 1980 or before. Moreover, despite the lack of rigor between exposure levels and excretion levels, all of the biological data on man and laboratory animals would support the employee contention of excessive uranium exposures and possible renal injury among workers.

Workers being forced to wear respirators and then failing to, or not wanting to, is understandable and a return to a bizzare era of inadequate and unrealistic worker protection. At best, good, well-fitting masks can be justified for short term use (< 1 hr). Usually they are incompatible with physical activity, ill-fitting and not truly protective. That workers reject their use on any grounds possible is to be expected. That workers continue to show uranium in their urines even when donning the masks is also not surprising.

"The 8 hr TWA for uranium dust is 0.25 mg m^{-3} of air." This statement from OSHA(?) is indicative of ignorance. The so-called MPC for uranium in air is not a operationally suitable TWA level. It is a limit, which, in the average case, is approached 10 percent of the time or less, or predicts that most operations will have a TWA around 10 percent of this limit. Otherwise, the MPC will be regularly violated. One cannot take the OSHA sampling data and estimate directly the exposure or urinary levels. The fact that the plant regarded 100 μg m^{-3} as an action level indicates they are not completely naive regards the MPC air.

In summary, the exposure conditions in the TNS plant have been excessive for at least 2 years. Monitoring of the environment and the workers' urine, although inadequate, clearly attests to this fact.

P E Morrow

Paul E. Morrow, Ph.D.
Professor
Radiation Biology and Biophysics
and of Pharmacology and Toxicology

PEM:cb

Mr. **Gore**. Now, we asked another independent expert to come, and Dr. Morgan is going to testify in just a moment.

Dr. Archer was yet a third independent expert that we asked to evaluate the testimony, and his full name and title is Dr. Victor E. Archer, professor emeritus at the University of Utah, and I want to get your reaction to his analysis. He says, quote:

> None of the reported measurements are of a magnitude that would warrant a statement that any of the workers have definitely been injured by exposures to uranium dust and fumes. However, the fact that Tennessee OSHA recommendations and noted violations were apparently ignored, that external gamma measurements were high, that air exposure standards and urine uranium standards were frequently exceeded, all suggest that TNS does not observe the as low as reasonably achievable principle, or ALARA, that it's radiation safety program, potentially a good one, is inadequately carried out, and that the Tennessee OSHA is ineffective in enforcing standards.

Mr. **Gore**. Could you react to that?

Mr. **O'Brien**. Yes, sir. I don't know the good doctor, but he sounds like he's making a relatively reasonable review of the standards and of the program.

The program that was there, as I've already said, had a number of detailed deficiencies in it. I'm used to a radiation safety program that is a lot tighter in detail than this one was, and much more cautious and careful.

There was an ALARA program started before the strike. I don't know how far along it was. It wasn't very far along, I don't believe. There was an ALARA program. There now is a detailed, documented ALARA program in effect, the reason for that being that since we don't really understand the risks of low level ionizing radiation, we are morally required to reduce the radiation exposures as low as reasonably achievable.

I believe in that philosophy. I've always carried it out in my past operations, and TNS is now doing the same thing.

Mr. **Gore**. It hasn't always done that, has it?

Mr. **O'Brien**. I would say that in the time since 1976 that we purchased the plant, no, it has not. For the first couple of years of that time, it definitely did not do that.

Mr. **Gore**. What about at the time the employees went out on strike? Would you say you were following the as-low-as-reasonably-achievable standard then?

Mr. **O'Brien**. Following it is a difficult thing to respond to. We definitely——

Mr. **Gore**. I understand the difficulty.

Mr. **O'Brien**. We definitely had implemented the philosophy of ALARA at that point in time.

Mr. **Gore**. Were you following it at that time?

Mr. **O'Brien**. We were trying to reduce exposures, yes, sir.

Mr. **Gore**. Were you following the ALARA principle at the time the employees went out on strike?

Mr. **O'Brien**. Of course. That is the ALARA principle.

Mr. **Gore**. Would you say that these exposures months on end above the NRC guidelines conform with the ALARA principle?

Mr. **O'Brien**. No.

Mr. **Gore**. Well, then, were you following the ALARA principle?

Mr. **O'Brien**. Oh, you mean, were we being successful? No, we were not.

Mr. **Gore**. OK. Well, then, the union really was right, then, that you weren't doing the job you should with respect to health and safety, wouldn't you agree?

Mr. **O'Brien**. Yes. What I would say, though, is that the deficiencies that existed, we admitted those deficiencies—maybe not to the union, but we admitted it to ourselves—and they were being—

Mr. **Gore**. All right, now. Wait a second. Wait a second right there. You admitted them to yourselves, but not the union?

Mr. **O'Brien**. Well, I did not carry on any part of the union negotiations.

Mr. **Gore**. Why wouldn't you admit to the union that they were right, that you weren't doing the job you should with respect to health and safety?

Mr. **O'Brien**. I can't——

Dr. **Schell**. I'd like to comment on that.

Mr. **O'Brien**. OK.

Mr. **Gore**. Dr. Schell?

Dr. **Schell**. Yes, we were trying to conform to the ALARA principle and the ALARA policy. The fact that one is not successful at all times doesn't mean that you're not attempting to do that. We were in a situation where we had, if you will, conflicting aspects going on where the industrial rate, initially just getting into the penetrator production business at Tennessee, was increasing at the same time we were attempting to apply an ALARA philosophy and an ALARA principle, and whether you call it that or not, our intent was to lower exposure levels, airborne contamination levels, as low as practicably possible.

Mr. **Gore**. I see. So your production plans and your commitment to health and safety were at that time in conflict?

Dr. **Schell**. They weren't at odds. The results of making more penetrators per shift or more penetrators per day was catching up with the solutions that we were attempting to put into place.

Mr. **Gore**. And the production increases were given precedence over the achieving of the lower health and safety hazards?

Dr. **Schell**. No, they were not given precedence over it. What I'm talking about is an increase——

Mr. **Gore**. Well, evidently they achieved precedence, whether by action or intention.

Dr. **Schell**. No, sir, but what we are observing here is an increase in levels that was increasing, still below the limit, but increasing while the production rate was increasing, and we were taking coincident steps with attempting to relieve that, and those steps have been taken. We're talking outside the penetrator shop area in this particular case.

There were many examples. There were six—what I call six required task jobs prior to the strike that required respirators, which might have been for short periods of time, but also would have included the 8-hour-a-day wearing of the mask in the grinder area of the penetrator shop, and today we have one.

Mr. **Gore**. Would you agree with Dr. O'Brien that the union was actually correct in its contention that you weren't doing the job you should with respect to health and safety?

Dr. **Schell**. I would not put it in that context.

Mr. **Gore**. Well, would you disagree?

Dr. SCHELL. I would say we were doing a program that was, No. one, adequate; that was, No. two, improving; and certainly was meeting the objectives of attaining a sound ALARA policy where indeed you could measure declines, rather than every step you put in place, another step made it remain constant.

Mr. GORE. Well, I'll come back to that.

Dr. Schell, the committee has documents which show that on September 20, 1979, your plant was inspected by the Tennessee Division of Radiological Health. Among their other observations, they determined that TNS had a general lack of radiation safety program, had overexposures of personnel, the lack of a well-defined respirator program, and failed to report overexposures. This was back in September 1979. Was TNS informed of those findings by the Bureau of Radiological Health?

Dr. SCHELL. I really can't comment right now today explicitly on each one of those line items that you mentioned. My belief would be that, yes, we were.

Mr. GORE. Yes. What actions did the company take as a result of the Division of RadHealth informing you of these problems?

Dr. SCHELL. To the best of my knowledge, we acted on each and every one of them, because there are no——

Mr. GORE. You acted on each and every one of them?

Dr. SCHELL. There are no outstanding issues today.

Mr. GORE. Well, why then 17 months later, on January 29, 1981, was the same Division of Radiological Health still notifying you of the same violations?

Dr. SCHELL. What was the last date that you mentioned, sir?

Mr. GORE. I read you the list of violations from September 20, 1979, and it's fair to assume, as you do also, that the company was informed of those, and I believe we have records that the company was indeed informed, and we'll put the correspondence into the record. I asked you what actions you took as a result, and you presumed that each one of the complaints was acted upon and remedied, yet 17 months later, the same Division of Radiological Health came back and conducted another inspection and found the same violations. Why would that happen?

Dr. SCHELL. Conditions within that facility had changed.

Mr. GORE. No, no, they hadn't changed. Or at least these conditions hadn't changed. Are you saying that production had increased?

Dr. SCHELL. I'm saying the nature of our business and how we were doing it at that point in time had changed in those 17 months.

Mr. GORE. Well, the hazard to the workers hadn't changed. Why would that be?

See, we've got this great debate going on in the United States today that the Federal Government ought to give all the responsibility for enforcing health and safety regulations to State governments. The State government doesn't have penalties it can assess, for a variety of reasons, and yet we're told that companies are capable of taking this responsibility on themselves. No serious problem. After all, we're all human beings, and we care about each other. Yet here we have the delegation of responsibility by the Federal Government to the State of Tennessee, an inspection where the company is told of serious problems, or I don't know if they characterized them as serious—they sound that way to me; maybe they were characterized in some other way—general lack of a radiation safety program, and then 17 months later, when the company had had plenty of time to do something about it, a subsequent inspection showed the same things. Now, why would that be?

Dr. SCHELL. I don't think that 17-months-later letter or report, whatever you're referring to, commented on explicitly the same things. I don't have that in front of me, but I'd be happy to comment on it.

Mr. GORE. They still notified you of violations with respect to overexposures, personnel monitoring, training of your employees. We'll put both inspection reports into the record side by side, but the point is there were repeated notifications to the company of problems that went unremedied. Then the employees took it upon themselves to try to get something done about this, because the regulatory authorities were incapable of doing it, apparently, and they're fired. At the same time, the company had, in Dr. O'Brien's word, admitted to itself that the union was right, that the company wasn't doing an adequate job or the job it should with respect to health and safety, but declined to admit it to the union.

Now, I know that Macy's doesn't tell Gimbel's what it's plans are, but we're trying to develop a little better relationship between management and labor in the United States, and it's not going to happen if the company is not candid with the employees about health and safety concerns.

Now, I don't want to be unfair, but really it seems to me that if I had been in your position, I like to think that when I got this consultant's report, even if an adversarial atmosphere had developed between the company and the union—I like to think I would have had the good will to say, "Look at this. They were right. This has apparently gotten away from us," and called the union people in and said, "Let's sit down and work together to try to solve these problems. Our own consultant tells us that we ought to do this."

Did the adversarial conflict take over and preclude that option?

Dr. SCHELL. No; it certainly didn't. I repeat again, the items in that consultant's report were known to me before—and my staff and the rest of the operation at TNS—and action had been taken on virtually all, if not all, of the items referenced by the consultant.

Mr. GORE. All right.

Dr. SCHELL. My attitude concerning working with the people started when I got there to improve communications and to work on issues such as this, such as housekeeping—and health and safety programs have to start with housekeeping. Health and safety programs have to start with a cooperative work force that will work together with management to attain a good health and safety result.

Mr. GORE. Well, that's very hard if there's not commitment on the part of management to the program.

Dr. SCHELL. There's no question about commitment there.

Mr. GORE. Now, I happen to believe your statement in your opening testimony that you now have such a commitment.

Dr. SCHELL. I have.

Mr. GORE. I want to believe that. I want to believe that. Do you think that these employees ought to be penalized for having to bring that to your attention by means of a strike?

Dr. SCHELL. They are not being penalized because——

Mr. GORE. They don't have their jobs.

Dr. SCHELL. They're not being penalized because they brought it to my attention.

Mr. GORE. That's why they went on strike.

Dr. SCHELL. That's their argument. I was fully aware, after arriving down at TNS, of what the issues were. I was told when I walked in the door—and I know I'm getting into a negotiation area here, but I'm going to make the comment, anyway. In order to assess what the issues were with the people, I went around and found out. The only input I could get was, "There's going to be a strike." Asked them why; couldn't get a good reason. It certainly wasn't health and safety. I'm testifying under oath.

Mr. GORE. But you said you weren't present at the negotiations.

Dr. SCHELL. No, I was not present at the negotiations.

Mr. GORE. The union folks were present at the negotiations, and they just testified under oath that that was their principal concern, and that's what they raised first and foremost and throughout the negotiations. You're relying on second-hand statements from the people who had messed up and allowed this outrageous health condition to be created there.

Dr. SCHELL. No, sir, I'm not relying on that.

Mr. GORE. Well, you weren't present. You're relying on somebody else's statements about it, aren't you?

Dr. SCHELL. Yes, sir.

Mr. GORE. OK. Well, as I said, I think a great injustice has been done here, and I hope there is some way to remedy it. I also hope that we can learn from this experience, and I want to ask the other witnesses who come in during the rest of this hearing to help us understand how we can prevent an injustice like this from occurring in the future. I have a feeling that the answer does not lie in increasing abdication by the Federal Government of the responsibility to others to try to see to it that companies provide a safe workplace.

Mr. O'Brien, I would like to afford you an opportunity, if you can, to listen carefully to the later testimony, and if you wish to return to the witness stand and address one of the scientific health questions, I invite you to do so.

And, Dr. Schell, I afford you the same opportunity, if you wish.

I'd like to thank you gentlemen for appearing, and I'd like to conclude your part of the hearing by saying once again that to put the company's posture in context, in Washington, with respect to your work for the Defense Department, at least, the company has an excellent reputation, and the best of all possible worlds, in my opinion, would be for these employees who had the guts to fight for what was right to get their jobs back, for the company to take forward a commitment to health and safety, expand the operations there, as you now hope to do, and provide a safe workplace for the employees. That's the result that I hope we can arrive at. It may be hard to get there, but we're going to do our best.

Thank you very much for being here today.

[The following material was received for the record:]

rmc

Radiation
Management
Corporation

WASHINGTON DIVISION

9022-A1
TELEGRAPH ROAD
LORTON, VA 22079
(703) 550-9559

Mr. Leon Cuthbert
Director Environmental Health and Safety
Aerojet Ordinance Company
9236 East Hall Road
Downey, Ca 90241

May 29, 1981

Dear Sir;

Enclosed is our report on the audit of your facility. We probably could have done it in more detail if you were operating at the time.

If you have any further questions, please feel free to call.

Sincerely,

John B. Davis

John B. Davis, C.H.P.
Manager, Southeast Division

Period of Survey
May 13, 14 & 15

Strike began May 1

1. Purpose - The purpose of this trip to TNS was to determine for Aerojet Ordinance.

   a. If TNS was in compliance with the state of Tennessee regulations.

   b. If not in compliance, what measures would have to be taken to bring TNS into compliance.

   c. What measures could be taken to improve upon areas already in compliance.

2. Persons visited were:

   Mr. Leon Cuthbert
   Mr. Jerry Hoynacki, Operations Manager
   Ms. Sally Hauck, Technician
   Mr. Jim Barlow, R.S.O.
   Mr. George Christenson, Vice President of Operations
   Mr. Robert Schell, Vice President General Manager

3. Area of Non-Compliance

   a. A licensee must limit concentrations of airborne materials in restricted areas.

The following areas of the operation exhibited concentrations of U-238 in excess of the limit of $1x10^{-10}$uci/cc during the first quarter of 1981.

(1) Rough O.D. Grinder
(2) Fine O.D. Grinder
(3) Nose Grinder
(4) Derby Breakout Areas
(5) Mold Cleanout Areas

   b. Respiratory Protection Program

Plant workers in the above areas were placed in Half face respirators which did supply the necessary protection factors. However, the state of Tennessee regulations state "The license as a precautionary procedure use process or other engineering controls to limit concentrations of airborne radioactive material." It further states that the license may make allowances of the use of such equipment providing that the program meets the requirements of Reg Guide 8.15, acceptable programs for respiratory protection. Chapter 3 of NUREG 0041 which is referenced by Reg Guide 8.15 lays out the elements of an acceptable program. The following areas of this chapter do not appear to be adequately addressed by TNS.

(1) Written policy statement from management for respirator use.

(2) Adequate medical surveillance program for users.

(3) Proper training program.

(4) Proper fitting, use, cleaning, storage, inspection, qualit assurance, and maintenance of equipment.

The above is a very important area. It is too much to expect a person to wear a respirator day in and day out without experiencing physiological and mental strains. Where this occurs, he tends to cheat on the wearing of the mask. As evidenced by the fact that bioassays did not drop as low as one would expect when plant personn started to wear respirators.

c. Surveys

Tennessee regulations state "Each license shall make or cause to be made such surveys as may be necessary for to comply with the regulations of this part."

The reduction process seperates the Th-234 daughter isotopes from the U-238. The Th-234 is a beta emitter. There is a potential for large amounts of the Th-234 to be present in the derby breakout area The plant is currently monitoring only for alpha activity in air samples and wipe samples, assuming all Th-234 activity is in equilibrium with the U-238 parent.

The lack of surveys for beta activity also applies to samples of effluents released to unrestricted areas. An additional comment is that the air samples should be counted at 24 hours and recounted in 72 hours if a marked difference exists then a correction should be made for RM and TN activities.

There was a reported extremity over exposure last year. The only evidence of surveys conducted to assess the exposure from a block of uranium metal showed that it was done with a GM survey meter. This is not a satisfactory method for determining the surface dose rate from a piece of metal. No personnel contamination monitor was provided in the change area through wich we exited from the contaminated area.

d. Release of effluents to unrestricted areas.

One sample was a factor of five higher than the allowable release concentrations. This will violate the release rate averaged over the year.

e. Personnel monitoring

Tennessee regulations state that appropriate personnel monitoring devices shall be provided.

Many operations require the direct handling of the metal by plant personnel. These personnel are provided with wrist badges. These will not measure the finger dose of a person satisfactorily.

The only attempt to measure hand exposure from the Uranium metal was done using a GM survey meter. This type of survey will not accurately measure this type of exposure to the finger.

f. Training

The state of Tennessee requires that proper training programs be conducted for all persons in the restricted areas.

The evidence that I saw indicated a very sketchy program, poorly documented.

g. Calibration

The terms of the license requires survey meters to be calibrated semi-annually. It was stated by the plant HP personnel that they were behind in following this requirement. There was no evidence device on an air sampler I checked that it was calibrated.

h. Not properly adhearing to requirements of the license in the use of protective clothing and respirators.

i. A brief glance at the plant procedures showed discrepencies and omissions. As examples, the following were noted:

(1) The responsibility to see to it that the plans are adheared to was not established.

(2) Respirators to be worn upon the direction of the foreman or when a cloud of dust is observed.

(3) Respirators were to be disinfected every few months.

j. While probably not a violation in itself, except maybe in the ALARA concept of the regulations, there seems to be a lack of management committment to a radiation safety program. The enforcement of radiation safety regulations repeatably has been left in the hands of the HP people, when actually it should be the responsibility of the first line supervisors, the foremen.

There were several allegations by health physics personnel of people not wearing respirators when they were supposed to. Our observation showed that protective clothing was not being worn. It was reported that finger rings TLD's were "contaminated" when gloves should have been worn which would have protected them. Workers failed to connect ventilation lines. Although a disciplinary program exists, there was no evidence given that ti was inforced.

4. Solutions to bring TNS into compliance

a. Airborne Problems

The long term solutions to this problem is not putting everyone in the area of high airborn concentration into respirators. Respirators should be reserved for short term or emergency situations. A review or the problem turned up the following items:

(1) The ventilation system is poorly designed.

(2) Some units, each with its own blower, discharge into a common manifold with no dampers to control flow. If a given machine is turned off its blower could be off and air could be discharged back into the room.

(3) Leaks were observed at junctions in the duct work.

(4) The enclosures around the grinders could be improved. I discovered a fine mist of water from the side of one grinder.

(5) It was reported that the effective use of the ventilation system was a function of the doors to the building being opened or closed.

(6) The uranium derbies are removed from their mold using a ventilation collar between the mold and the container in which is used to catch it. This is reported to leak. The mold is banged on the floor to release the debris, that can create a dust hazard if the floor is contaminated.

(7) The molds are cleaned on a down draft table. If there are any cross currents of air, these tables can be ineffective. The ventilation line from the table had a hand operated slide valve which opened in the upward direction. There was nothing present to hold the valve open and it could have easily vibrated closed and could have remained that way as there were no indications of loss of flow for that system or for many other vent systems.

Dr. Schell and Mr. Christensen stated that work was in progress in the California plant to develop a new method of manufacturing to do away with most of the grinding. They said that this would be ready for installation in August. I would make the following recommendations to solve the problem:

(1) Determine whether or not present equipment meets engineerin air flow specifications. (air flow, amount and rate)

(2) Correct, improve and/or replace equipment as necessary to insure that airborne concentrations, accessable to employees, do not exceed 25% of MPC.

(3) Install high efficiency filters to filter the effluent from the grinding operation.

b. Respirtory protection program

(1) Install engineered control solutions.
(2) Review procedures and rewrite when necessary.
(3) Properly fit respirators using a quantitive fit booth.
(4) Conduct a training program as outlined in section 8 of NUREG 0041.
(5) Establish a medical surveilance program.
(6) Establish a proper management commitment to the program.

c. Surveys

(1) Failure to monitor beta activity this will be alleviated by the purchase of the automated gas flow proportional counter.

(2) Dose evaluation of the D.U. objects and time and motions studies should be made on persons handling D.U. routinely. Surface dose measurements can be made using TLD's or film.

Time and motion studies will give a rather accurate dose assessment. This is for meeting compliance as well as for your own protection. Injuries from this type of operation tend to manifest themselves several years late

(3) In conjunction with the ventilation study discussed earlier a study should be done to find the optimum locations for the permanently mounted air samplers so they will more truly represent the breathing zone of a person working in the area.

d. Release of effluent to the atmosphere in amounts in excess of limits.

It is my understanding that this happened because of a filter being placed in backward.

(1) This problem can be reduced by the redesign of the holde so that the filter can only go in one way.

(2) Training

(3) Testing of filters after installation; All HEPA filters should be tested after installation.

e. Personnel monitoring

TLD badges are now being kept in the guard house. If contamination of finger badges is a problem, then it will be a simpler matter to monitor all badges with a GM counter after they are turned in at the end of the shift. Also insure that the gloves being worn are not contaminated abo limits. Procedures should be instituted that would require an employee check his gloves daily for contamination.

f. Training

Institute a training program which will fulfill the requirements of the regulations and Reg Guide 8.15. Carefully document the program. The program should be tailored to meet your needs. The program should be given in two levels, the first or basic level aimed at the production workers and other non-management or non-supervisory persons, and the second a more in depth presentation for the foreman and other superviso

g. Calibration

All equipment used in making health and safety measurements should be calibrated on some established frequency. The radiation survey meters should be done semi-annually as established by your license. Air flow devices on the air samplers should be calibrated at least annually.

h. Miscellaneous

(1) Your procedures dealing with radiation protection should be evaluated by an outside consultant.

(2) The procedures should establish who is responsible for enforcement.

(3) Many violations are a result of ignorance as to the current way of doing something and can be corrected by training. Others will require strict enforcement. It is the responsiblity of the operator of the plant as licensee to make sure that rules and procedures are adheared to. This can only be done by periodic management audits of the safety program.

(4) Measures to be taken to improve those areas in compliance

a. Investigate the bioassy program. From reading th lung counting report and looking over the data, I am not convinced that the contractor has taken into account the fact that the Th-234 may not be in equilibrium with the U-238.

b. Investigate to determine that the fixed air samplers are truly measuring the air in the breathing zone of a worker.

c. Attempt to correlate the valve of ventilation improvements with air sampling data.

d. More closely monitor releases from the building

(5) Other Related Areas

a. Filter systems on the crusher
The use of the .3 micron particle size in reference to filter efficiency is done because this size particle is most difficult to filter. The reason for this is that particle size falls between two entrapment mechanisms an not removed efficiently by either. Rather than try to measure the particle size of less than .3u as the state requested, point out to them that particles smaller than .3u will be filtered just as efficiently as larger parti and that effluents will be monitored.

b. The best way to handle a pregnant woman is to explain the situation to her when she is hired. Have your lawyers draw up a release form for her to sign signifying that she has had the provision of Reg Guide 8.15 explained to her. Emphasize the Reg Guide periodically in training sessions. If she does become pregnant at a later date, again explain her choices to her and then let her make the decision.

(6) Conclusion

Since the union, now on strike, believes the depleted uranium operation to be hazardous because respirators are required to be worn, Aerojet asked RMC to determine if the operation was hazardous and to what degree. D.U. is a rather innocuous radioisotope and with exposure limits to radiation and airborn concentrations based on 50 years of exposure, short periods of exposure to radiation or airborne concentrations slightly in excess of MPC presents no real hazard. However, the actual or degree of hazard is not the issue. Aerojet must assume, as will the regulatory bodies, that since regulatory requirements are based on health and safety, not meeting such requirements represents a health and safety hazard.

At TNS airborn concentrations exist in working areas slightly in excess of MPC when averaged over a calendar quarter, with individual air samples showing concentration as much as five times the MPC (quarterly average). To prevent employees from being exposed to airborn concentrations in excess of MPC employees are required to wear respirators continuously during an eight hour work day. To date, this requirement has been in effect for four months.

There is an immediate need to correct the high airborne problem by engineering means. Management does not plan to correct this immediatly, but to wait until the process is changed from a grinding to a swagging operation. Months will be required befor it is in operation with no assurance that the airborne problem will be eleviated. Time wise this is not acceptable.

We observed many areas of non-compliance. These coupled with the past history of whole body and extremity over exposure should be of great concern to management. The plant health physics staff seems to be capable and is working to improve the program. However, plant management has to support these changes and has to pay strict attention to the program.

12/4/79
12/4 JCG

Tennessee Nuclear Specialties, Incorporated
Jonesboro, Tennessee
5-9009-F4

A visit was made by Johnny C. Graves, Lewis R. Barber, and me to the above facility on September 20 and 21, 1979, to conduct a routine re-inspection of the activities conducted under Radioactive Material License Number 5-9009-F4. The last inspection of this Facility was made on September 24, 1974. This license authorizes the processing of thorium nitrate tetrahydrate to thorium oxide, and the storage incident thereto; the processing of uranium hexafluoride to uranium tetrafluoride, and the processing of uranium tetrafluoride to uranium metal; the casting and machining of uranium metal; and the storage incident thereto of natural and depleted uranium. T.N.S. is presently processing uranium and thorium in separate areas of the plant; however, the production of thorium has slowed considerably (it appears to be a two or three-man operation only at this time).

We met first with Mr. Robert J. McCracken, Vice-President of T.N.S., who introduced us to Ms. Nancy Trivett, who is the Health and Safety Manager, in charge of monitoring. Mr. Jim Barlow, who is normally the Safety Manager (while Ms. Trivett is normally the Health Manager), was in Oak Ridge attending a 5-week course at the time of this inspection, and, therefore, Ms. Trivett had assumed responsibility for both areas. Ms. Trivett, who has been working at T.N.S. for the past two years, assisted us during the inspection, after a preliminary summary of the facility's operation and future plans with Mr. McCracken, as well as a tour of the plant.

The management at T.N.S. is as follows:

Mr. Jean Soppet, President
Mr. Robert J. McCracken, Vice-President
Mr. Jerry Hoynacky, Production Manager
Mr. Jim Barlow, Safety Manager
Ms. Nancy Trivett, Health Manager

In Mr. McCracken's summary of T.N.S. future production plans, he indicated that thorium processing is being phased out, while uranium processing is being stepped up. A new line of machinery is being installed (from California), and Mr. McCracken indicated that they hope to have the new line being installed by late December, and start operating by January.

On our tour of T.N.S., Mr. McCracken gave us some idea of the amount of material being processed. He told us that T.N.S. receives cylinders that each contain approximately 27,000 lbs. of UF_6, or 19,000 lbs. of uranium. There are approximately one and one-half of these cylinders run through the 6:4 unit per week, therefore indicating that T.N.S. receives 6 cylinders of UF_6 per month. There have been approximately 3 million pounds of derbies made at T.N.S. in the past 9 months, so with each derby weighing approximately 300 lbs., this works out to be approximately 10,000 derbies. As for the thorium process, at any one time T.N.S. has one to two tons of thorium on hand. One truckload of magnesium fluoride uranium salt, comprised of 50 to 60 barrels (or 350 to 400 cubic feet) is shipped each week to Chem-Nuclear Services, Inc., in Barnwell, South Carolina. As per a telephone conversation between Michael Mobley and Mr. McCracken, T.N.S. apparently is still being allowed to ship waste to Chem-Nuclear at this time. In a later interview with Mr. McCracken, he indicated that each barrel had levels of 1.1-1.2 mrem/hr. He also maintained that the uranium process has a 94-95% yield of uranium; however, shipping records indicate that 15% of the waste in the barrels is uranium (see Chem-Nuclear shipping report).

Outside of the U processing, Th processing, and uranium billet buildings, there is a large tent that alledgedly has only containers of graphite and magnesium; however, at the time of this inspection, there was a box housed beneath this tent which was labeled "Radioactive...LSA". (This box, it was explained, contained only contaminated paper waste, and the like.)

Along side this tent were approximately 40 barrels of radioactive waste ready to ship (90 lbs. uranium oxide each, 10% U, as referenced by Mr. McCracken during this interview). These barrels are steam cleaned before shipping.

Beyond the tent is a warehouse where we found approximately 120 barrels of UF_4 being stored for N.L., which uses the material for commercial work. These barrels had no LSA labeling, or anything, other than weight and barrel numbers. There is one large fan for ventilation at the east end of this building.

While touring the processing buildings, it was noted that some men were wearing respirators, while others were not. When asked about T.N.S. rules regarding respirators, Ms. Trivett told us that respirators are required to be worn only around the jolter and the slag box (which Ms. Trivett indicated has the largest ventilation problem), and the wearing of respirators in other areas is optional. While walking through the plant, one of these respirators was noted setting out on a bench in the thorium area with no protective covering.

As for air sampling, T.N.S. has 6 "grab" samples taken daily, and these are 1) in the lathe area, 2) next to the glove box, 3) in the thorium machine area, 4) in the dolomite packing area, 5) in the 6:4 unit area, and 6) in the jolter area. The T.N.S. license application states, "During operations in a production area, at least one air sampler shall be operated continuously. Air sample filters shall be collected at a minimum daily frequency from continuously operated air samples." However, there is no continuous air sampling being performed at T.N.S. presently.

Ms. Trivett takes smear test and instrument surveys at varying frequencies, depending on the amount of work and probability of gross contamination existing in an area (frequencies are three times, two times, and once a week). If contamination is found in an area, Ms. Trivett tells whoever is working in that area to carry out decontamination procedures; however, this order is not documented, nor is the contaminated area re-surveyed after decontamination has been carried out.

Water samples are taken from the holding pond "every now and then", according to Ms. Trivett, but the samples have "virtually nothing" in the way of activity. Samples are also taken every now and then upstream and downstream of the plant. The license application states that samples will be collected daily from the Little Limestone Creek downstream of the basin, but before the creek leaves T.N.S. property.

Breathing zone sampling is done with a Monitaire Sampler-MSA Model S. These are portable pack samplers worn by the shop personnel for varying amounts of time in varying locations in the plant. The sampling frequency via this method is inconsistent, in that sampling may be conducted for several consecutive days, followed by an absence of sampling for several days.

As for personnel monitoring, Ms. Trivett told us that all workers wear whole body TLD badges from Eberline (frequency of exchange is semimonthly), and Eberline 62 pocket dosimeters (0-200 mR). Ms Trivett checks the dosimeters worn by the men working around the vacuum furnaces herself every day. Some of the men also wear TLD ring badges by Eberline (exchange is bimonthly); although it was not specified, it is assumed that the men actually handling the material (e.g., around the Th tray and U slag box) are the ones that wear ring badges. Urinalysis is run on shop personnel every two weeks, and on administrative personnel once a month. And once a year all personnel undergo in vivo counting by Helgeson Nuclear Services, Inc.

Initial training at T.N.S. of the employees seems primarily concerned with operational procedures, and very little with radiation and radiation safety; however, there are safety meetings held once a week. Just how effective these meetings are is questionable in that one employee, [redacted], told us, "I don't know much about radiation", and he's been with T.N.S. for a year. As for training in the proper use of respirators, this seems rather lax. [redacted], working in the thorium area, told us that no one checks the employee's respirators, nor does there seem much concern about the exchange frequency of filters, or about the need to wear a respirator. [redacted] was working with the thorium tray and glove box, both of which involved a lot of fine thorium powder. [redacted] indicated that it is not unusual for the person working in this area to have to stick his head, and sometimes a large portion of the trunk of his body, in the glove box, due to awkward positioning of the glove port holes. And yet respirators are not required for this particular job.

There has been one incident at T.N.S. since their license was amended in its entirety, and that was when one of the U reduction furnaces blew up, due to some wet green salt being inadvertently left in the retort. Apparently, only one man, [redacted], was around the furnace at the time; [redacted] lost his TLD, but Ms. Trivett indicated that she had TLD's out in the immediate area. All personnel were instructed at the time to stay out of this area (uranium side) until complete assessment of the situation could be made. Mr. McCracken told this Department in late August of this year that a complete report and evaluation of this matter would be sent in, but as of yet no such report has been received.

A review of records for T.N.S. showed several disturbing aspects of their overall radiological safety program:

1) When Ms. Trivett is absent from T.N.S. (and this seemed to occur rather frequently) there is no one designated to do any aspect of the environmental or personnel monitoring. Perhaps this situation will be rectified with the return of Mr. Barlow to T.N.S. from the Oak Ridge course, but careful attention should be given to this problem.

2) Outside environmental sampling appears somewhat haphazard. The sampling done "downstream" The records pertaining to this sampling were incomplete, and results were often questionable in that under "counter efficiency", Ms. Trivett often had simply a question mark. No environmental air samples were being taken.

3) Smear test and instrument surveys seemed inadequate in that the surveys of the "front offices" and "uncontrolled outside areas" were not being performed. In addition, when contamination is found, a re-survey of the contaminated area is not conducted after decontamination procedures have been performed.

Ms. Trivett told us that T.N.S. has a limit of 50 ug/l for urinalysis, but the reason for this particular level of limitation was not made clear. There were several cases of samples over this limit. [redacted] had 115 ug/l, 172 ug/l, and 140 ug/l on 8/13/79, 7/31/79, and 7/19/79, respectively. [redacted] had 245 ug/l and [redacted] had 123 ug/l on 5/23/79. [redacted] had 172 ug/l on 7/31/79 (same period of time that he received 3631 mrem whole body exposure). [redacted] had 366 ug/l on 7/31/79, and dropped to only 2 ug/l in the next sample; however, he quit working at TNS immediately after this last sample was taken.

what limit is [illegible]

With all these documented overexposures, TNS does not seem to have provisions for assuring that these people do not continue to receive high exposures.

After reviewing records, another walk-through was made of the plant, this time to take our own smear test and instrument surveys. Dr. Barber had already taken two air samples, one inside, beside the "chipper" (this is probably the slag box), and one outside, next to the air filter unit for green salt and magnesium. The former sample had 211.0 p Ci/m^3 gross α, and 305 p Ci/m^3 gross β (in standard units, this works out to 2.11 x 10^{-10} u Ci/ml and 3.05 x 10^{-10} uCi/ml). The latter sample showed 16.2 p Ci/m^3 α (or 1.62 x 10^{-11} u Ci/ml), and 38.7 p Ci/m^3 β (or 3.87 x 10^{-11} uCi/ml). The former sample, at least, is probably largely U-238, in that the most active smear sample analyzed by this Department's lab showed an activity ratio of 6 U-238:1 U-234. Smears by seven exhaust vents were taken by Dr. Barber, the most active of which is discussed in the preceding sentence. Four water samples were also taken-one in the pond; upstream of the plant; one downstream; and, one in the ditch above the pond. In this same order, the results found were 10,300 pCi/l beta and 1,450 pCi/l alpha; 29.0 pCi/l beta and 25.0 pCi/l alpha; 7.0 pCi/l beta and 4.0 pCi/l alpha; and, 16.0 pCi/l beta and 27.0 pCi/l alpha.

appears to be general contamination in the area

Instrument readings (with Ludium 16, α scintillation probe) were as follows:
(CPM X 10 = DPM)

Inside shop, immediately outside visitors' contamination change room 120 x 10 CPM
U blending area 100 x 10 CPM
on blender platform 250 x 10 CPM
on upper portion of blender 400 x 10 CPM
6:4 unit, lower level 220 x 10 CPM
6:4 unit, steps to upper level 200 x 10 CPM
Mg storage 300 x 10 CPM
Jolter 50 x 10 CPM
Th tray 200 x 100 CPM
Th machinery, under ramp readings on x 100 scale
U boiler 100 x 10 CPM
drill platform 350 x 10 CPM
reduction pot storage 80 x 10 CPM
Inside visitors' contamination change rooms
    contamination side 60 x 10 CPM
    clean side 150 CPM

?

(These whole body exposures are on T.N.S. reports, and not their reports from Eberline that we copied.)

(10) Overexposure of personnel. Includes several instances of personnel receiving whole body exposures in excess of 3 rem in a calendar quarter; and, one noted case of an individual's hands receiving an exposure in excess of 18 3/4 rem in a calendar quarter and one skin overexposure.

11 & 12 (11) Failure to report these overexposures to this Department within 30 days. Failure to report these overexposures to involved personnel.

3 (12) Lack of procedures for assessing individual intakes of radioactivity by exposed personnel. (Calculations of intakes of radioactivity by personnel, using air sampling results and reported time intervals spent by individuals in high airborne contamination areas, are not being done.)

2 (13) Lack of proper surveillance and lack of proper use of respiratory equipment in areas of high concentrations of airborne radioactive material.

(Items 1, 2, 9, and 13, were deficiencies noted in a previous inspection on September 24, 1974, although they are not referenced in quite the same manner.)

2 (14) Lack of well defined respirator program.

1 (15) General lack of radiation safety program.

In conclusion, even though T.N.S. has cleaned up their facility and greatly revised their radiation safety program since this Department's 1974 inspection of their activities, the present quality of their overall radiation safety program is not adequate to encompass the scope of their present and future production level. The addition of a qualified, competent health physicist to their staff as the R.S.O. would greatly reduce or eliminate the bulk of T.N.S.' safety problems.

why was this not suggested in the letter

ON next visit to TNS, be sure and check:

(1) % U yield

(2) Clarification of respiratory protection program (how about asking for a respirator to wear, & note where they're stored, condition, etc.)

(3) "Action levels" of contamination

See survey forms; also narrative indicating that if contamination is found then decontamination is ordered. Note, however no evidence of resurvey is documented nor is order to decontaminate documented (See paragraph 6' page 2)

FROM [illegible] TO [illegible]
12/[illegible]/79 [illegible]
INFORMATION ☐
SUGGESTION ☐
APPROVAL
REPLY BY
TO BE SIGNED BY

December 3, 1979

Tennessee Nuclear Specialties, Inc.
Post Office Box 158
Jonesboro, Tennessee 37659

Attention: Mr. Jean Soppet, President

Gentlemen:

Thank you for the cooperation given Johnny C. Graves, Lewis R. Barber, and me during the inspection on September 20 and 21, 1979, of the activities conducted under Radioactive Material License Number S-9009-F4. After reviewing the data collected, it appears that certain of your activities were not conducted in full compliance with "State Regulations for Protection Against Radiation" and certain conditions of your license in that:

1. The radiation safety program, as referenced in Condition 13 of your license, did not appear to be administered adequately to provide the maximum degree of protection for your employees.

2. Evaluations, instructions, and actions concerning the functioning of your respiratory protection program were not properly maintained as required by 1200-2-5-.05(4) of "State Regulations for Protection Against Radiation".

3. There are no provisions in your program for assessing the individual intakes of radioactivity by exposed individuals, contrary to 1200-2-5-.03(2) of "State Regulations for Protection Against Radiation".

4. Personnel training in precautions or procedures to minimize radiation exposure was inadequate, contrary to 1200-2-5-.14(2)(c)2.(ii) of "State Regulations for Protection Against Radiation".

   NOTE: This refers to consistently high exposures being received by your personnel, and the observation that an employee did not realize that exposure could be received while resting on a derby he was cleaning.

   Personnel were not adequately trained in measures to maintain respiratory protective equipment in effective condition, contrary to Condition 13 of your license.

   NOTE: A respirator without any protective covering was noted setting on a work bench in the thorium machine area.

6. Continuous air monitoring, with a minimum of daily filter collection frequency, was not being conducted, contrary to Condition 13 of your license.

7. Proper leak test and instrument surveys of front offices and uncontrolled outside areas were not being conducted, contrary to Condition 13 of your license.

8. Instruction in the proper use of personnel monitoring equipment was inadequate, contrary to 1200-2-5-.11(2) of "State Regulations for Protection Against Radiation".

NOTE: Personnel were not requesting replacements for pocket dosimeters that were dropped in contaminated areas and which consequently "moved off scale".

9. An individual was exposed to radiation in excess of applicable limits, contrary to 1200-2-5-.03(1)(b) of "State Regulations for Protection Against Radiation".

10. An individual was exposed to radiation in excess of applicable limits, contrary to 1200-2-5-.03(1)(c) of "State Regulations for Protection Against Radiation".

11. Proper notification was not made to the Department concerning the exposure of personnel to radiation in excess of applicable limits, contrary to 1200-2-5-.26(1) of "State Regulations for Protection Against Radiation".

12. Proper notification was not made to personnel exposed to radiation in excess of applicable limits, contrary to 1200-2-5-.25(5) of "State Regulations for Protection Against Radiation".

* 13. Personnel monitoring records were inadequate and incomplete, contrary to 1200-2-5-.22(1) of "State Regulations for Protection Against Radiation".

NOTE: On the pocket dosimeter records, there were many instances where exposures received were indicated only as "moved off scale", and dosimeter readings were recorded in incorrect units (mR/hr); and, estimates of exposures received by your personnel in cases of lost or contaminated film badges were not being made.

14. A proper evaluation of the radiation hazard due to an explosion in a reduction furnace was not made, contrary to 1200-2-5-.10 of "State Regulations for Protection Against Radiation".

15. Adequate surveys for evaluating radiation hazards were not being conducted, contrary to 1200-2-5-.10 of "State Regulations for Protection Against Radiation".

NOTE: Personnel and environmental monitoring was not being conducted during the times that the Health and Safety Manager is absent from your facility, nor were surveys being conducted in unrestricted areas.

16. Results of radiation surveys were not being recorded in proper units, contrary to 1200-2-5-.22(2) of "State Regulations for Protection Against Radiation".

NOTE: This refers to the notation of "Mci/cc" on all of your facility's survey records, as well as the failure to convert from CPM to uCi/ml on waste water monitoring reports.

It is requested that the Department be informed within 15 days of the action taken to correct these deficiencies and to prevent their recurrence.

The deficiencies noted in Items 4 and 13 were previously called to your attention following an inspection of this license on September 24, 1974. Furthermore, it appears that a severe laxity in your facility's radiation safety program has developed. Immediate attention should be given to the upgrading of this program.

Sincerely,

Sally L. Hook
Radiological Physicist
Division of Radiological Health

SLH/kla 36-11

cc: Mr. Robert J. McCracken, Vice-President

TNS INC.
P.O. Box 158 Jonesboro, Tennessee 37659
615-753-4688

December 17, 1979

Ms. Sally L. Hock
Radiological Physicist
Division of Radiological Health
Department of Public Health
Cordell Hull Bldg.
Nashville, TN 37219

Dear Ms. Hock:

After reviewing your letter of December 3, 1979, TNS, INC. wishes to make the following response for your information and clarification. The comments made are numbered correspondingly to the items listed in the above mentioned piece of correspondence.

1. The radiation safety program, as referenced in Condition 13 of the license, is considered to be one of the more important parts of the license. As you know, at the time of your inspection, the radiation safety officer was in Oak Ridge, Tennessee attending a training program. He has now assumed the responsibilities of this position and it is felt that the program will now be administered more to the satisfaction of the Division of Radiological Health.

2. Due to the expansion of our manufacturing facility, the air surveillance program is being re-evaluated and expanded. Future evaluations and actions concerning the respirator protection program will be maintained in a manner more compatible with 1200-2-5-.05 (4) of "State Regulations for Protection Against Radiation". Our continuous monitors in each bay allow us to evaluate the total intake in 40 hours, however, we will continue with "extra grab" samples when necessary under unusual conditions.

50 μg/l

3. We have been evaluating the radioactive material pick-up by monitoring the bi-weekly urinalysis. When a man is over an arbitrary limit of 50 Mg/ml, we explore what he is doing that may have raised his level. We try to correlate between these levels, ~~his~~ TLD badge and the air samples in his work area, his personal habits are checked and if all of this still results in high levels in contrast to someone else in the same job, he is removed. If levels for all people in that job are high, then additional engineering is called for.

4. At present, individual on the job training is being conducted by the radiation safety office to familarize personnel in precautions and procedures to minimize radiation exposure, where appropriate.

5. Personnel are adequately trained in measures to maintain respiratory protective equipment in effective condition. Although well intentioned in our efforts, we cannot monitor individuals constantly. The personnel are informed and they are aware of the fact that if a respirator is left exposed without a protective covering, it is to be thoroughly cleaned before it is returned to service. TNS will initiate a disciplinary program for non-complian with our training.

6. Continuous air monitoring has been and is being normally conducted in each bay. At a minimum, daily filter collection from these units is being made.

7. As stated in 12(C) of our operating license, the areas monitored and frequency may change from time to time. Previous surveys indicated there was not a significant problem in these areas and the monitoring was discontinu Updated survey sheets do not include these areas.

8. The use of pocket dosimeters by some of our personnel is employed as an investigative measure. It is an optional program to supplement data obtained from the required TLD badge. Consequently, the fact that personnel were not requesting immediate replacements for pocket dosimeters which "moved off scale" is not considered a serio matter. The "off-scale" movement was a mechanical failu not an exposure.

9-10. TNS does not question the requirement for reporting over exposure, as in this case for skin and extermities, and certainly will do so in the future. However, there is a considerable question as to the accuracy of the actual exposure for the extremities due to the uniqueness of the event and only now are we developing historical data to what is to be expected in that area.

11. Notification will be made to the Department concerning the exposure of personnel to radiation in excess of appl cable limits.

12. Personnel who exceed the applicable limits will be furnished a written report on their exposure data for the period in question. It should be mentioned that the individual in question did view his exposure report and a discussion and assessment was made of the situation. We will, however, give him and any future over exposed personnel a written report.

13. Section 1200-2-5-.22 (1) of "State Regulations for Protection Against Radiation" is being followed. Suggestions made concerning recording data on personnel monitoring records will be considered in determining the estimates used for record entry for lost or contaminated badges.

14. The incident in question required a production stoppage. Immediately after the incident, surveys were made with a GM tube and an Ion Chamber. All exposed individuals were required to submit a urine sample on the following day while TLD badges were collected the day of the occurrence and sent to Eberline Instrument Corporation for evaluation. A continuous air monitor not more than three (3) feet from the explosion was checked and evaluated. All information obtained suggested there was not an exposure problem. The individual who lost his TLD badge was assigned an exposure similar to that required by individuals in the same general area. The area was cleaned, samples taken for analysis, and corrective measures implemented before production resumed.

15. We feel adequate surveys were done and the absence of the Health and Safety Manager with the lapse in daily sampling did not effect the levels in the plant. Those operations requiring surveillance such as shipping or release of vehicles, was done by others during the absence. The modification of surveillance in unrestricte areas was addressed elsewhere in this letter.

16. Proper units, as suggested, will be used to record the results of radiation surveys.

We wish to thank you for the interest and concern that was realized both during the inspection and the resultant follow-up. We feel that our current program is satisfactory, but we are always open to suggestions and continually strive for improvement.

Should any additional clarification be necessary in regard to any of the above mentioned items, please feel free to ask. TNS, INC will be glad to cooperate in any way that is feasible.

Very truly yours,

J. F. Soppet
President

JFS/cmd

cc: Mr. Johnny Graves

FROM ~~SLH~~ TO ~~[illegible]~~
1/14/80 ~~[illegible]~~
BG
[illegible]
INFORMATION
SUGGESTIONS
APPROVAL SLH
REPLY BY__________
TO BE SIGNED BY_______

C2-212 Cordell Hull Building

January 14, 1980

T.N.S., Inc.
P. O. Box 158
Jonesboro, Tennessee 37659

Attention: J. F. Soppet, President

Gentlemen:

Thank you for your letter dated December 17, 1979, indicating your desire to comply with the Regulations. We recognize your intent to correct the deficiencies noted in our letter to you dated December 3, 1979; however, there are several items to which your response has been deemed inadequate.

Item 1 indicates that the installment of the radiation safety officer is regarded as the primary mode of upgrading your facility's overall radiation safety program, which thereby necessitates supplying this Department with the pertinent credentials of your radiation safety officer.

Item 2, concerning the institution of an expanded respiratory protection program, has been discussed recently with representatives of your company. During these discussions we indicated that a satisfactory respiratory program should be based on the recommendations contained in NRC Regulatory Guide 8.15 and NUREG-0041. Your representatives indicated that these documents are now in your possession. Therefore, it is required that the details of this program be submitted as well as complete engineering design changes, including monitoring capability, which have been incorporated in your program and which may affect airborne radioactive material concentrations.

Item 3, regarding the bi-weekly urinalysis program, needs to be clarified by outlining the basis for the arbitrary limit of 50 μg/l, and by indicating the correlation between this level and the exposure received by personnel.

Item 4, responding to inadequate training of personnel in procedures for minimizing radiation exposure, has been discussed with your radiation safety officer, and, being an integral aspect of your overall safety program, requires a commitment of considerable attention by your radiation safety office and management.

Item 5, should be covered under your respirator program outline and in the training of personnel.

Item 6, regarding continuous air sampling, has also been discussed with your radiation safety officer, but it is further requested that an example of the results obtained via this method of sampling be supplied to this Department.

Item 7 (monitoring of unrestricted areas) is still of immense concern to this Department, and requires that provisions for the routine monitoring of and controlling of the possible spread of contamination to those areas be instituted into your radiation safety program.
(Note: On a recent visit to your facility by representatives of this Department, personnel were observed walking through unrestricted areas without first removing their protective shoe covers in the change rooms.)

The responses to Items 8 through 16 have been deemed adequate.

The laxness of your radiation safety and respiratory protection programs is of grave concern to this Department, and will be closely monitored, particularly with the impending production increase at your facility. One point that was discussed recently with your radiation safety officer, and that should be re-emphasized, is that the installation of the continuous airmonitors before the initial operation of the new production line is extremely important, and is to everyone's benefit.

In view of the severity of this situation a response is required within fifteen (15) days.

Sincerely,

Sally L. Hoch
Radiological Physicist
Division of Radiological Health

SLH/dlc 4-8

CC: R. J. McCracken, Vice-President

TNS INC.
P.O. Box 158 Jonesboro, Tennessee 37659
615-753-4688

January 27, 1980

Department of Public Health
Cordell Hull Bldg. Rm. C2-212
Nashville, TN 37219

ATTN: Sally L. Hock

Dear Ms. Hock:

We have received your letter of January 14, 1980 to which we will respond with the following comments:

1\.

Our Radiation Safety Officer, James Barlow, achieved a Bachelor of Science Degree in Environmental Health in 1972 and worked for three years as an Environmental Compliance Officer for the State of North Carolina; received a Master of Science Degree in Environmental Health with a Biochemistry minor in 1978; attended the five-week training program for Health/Physicists at the Oak Ridge Associated Universities facility; 2 years of experience in various aspects of uranium and thorium processing.

2. and 5.

At present, We do not have a work operation where the intake of radioactive material by an individual exceeds the 40-hour control measure. Ventilation units have been installed for all operations that had the potential to exceed this control measure. Problems can occur because of: (1) equipment failure (where the operation will be discontinued until repairs are completed); (2) the operator not using available equipment in a proper manner; (3) and unplanned events resulting in the temporary elevation of air concentration for short periods of time. In this case, the employees will be removed from the area or supplied with respirators until the problem is corrected.

Respiratory protection will also be used to compensate for infrequent but routine maintenance (i.e. equipment repairs to dust collectors) unplanned events where the radiation safety office or immediate supervisor deems it necessary, or any other situation where respiratory prevention appears to be a necessity. Respiratory protection will only be used as a temporary interim solution to an air quality problem.

The manufacturing facility which we are just now completing will have monitors at the work stations, an automated continous monitor and routine grab samples will also be collected. This area will only have a problem when a ventilation unit has difficulty and production at that unit will have to be stopped until this is corrected. At present, we know of no procedure in this area that will require respiratory portection.

Even though we will be utilizing respiratory protection much less frequently in the immediate future, we are vividly aware of the necessity to administer any program in an appropriate manner. Our expanded program should be implemented at least by utilization of temporary measures, within a two week period. Our program is detailed in a step by step fashion in the next few sentences. We feel that it will fulfill the applicable recommendations of NRC Regulatory Guide 8.15 and NUREG-0041.

A. Program Policy Statement
TNS, INC. respiratory protection policy includes:
1. The use of practicable engineering controls instead of respirators whevever feasible.
2. Suggesting the use of respirators for routine operations, where respirator protection is not required, to reduce exposures to a very low level. For non-routine operations where engineering controls are not feasible allowances will be made for use of respiratory protection devices to estimate exposures of individuals to depleted uranium. For emergency situations, respirators will be used on the assumption that depleted uranium concentrations in air may be in excess of the MPC.
3. Advising employees in situations where respirators are required that they may leave that area at any time for relief of respirator use in the event of equipment malfunctions, physical or psychological distress, procedural or communication failure, significant deteriation of operating conditions, or any other condition that might require such relief.

B. Selection of Equipment
Respiratory protective equipment will be selected to provide a protection factor greater than the multiple by which peek concentrations of depleted uranium are expected to exceed the MPC. Estimates of exposure during respirator usage will be based on this protection factor.

C. Program Elements

1. Air sampling and other surveys to identify the hazard, to evaluate individual exposure, and to permit proper selection of respiratory protective equipment.
2. Written procedures to ensure proper selection, supervision, and training of personnel using such protective equipment.
3. Written procedures to ensure the adequate individual filling of respirators, as well as such procedures to ensure the testing of respiratory protective equipment for proper function immediately prior to each use.
4. Written procedures for maintenance to ensure full effectiveness of respiratory protective equipment, including procedures for cleaning and disinfection, inspection, repair and storage.
5. Written operational and administrative procedures for control, issuance, proper use, and return of respiratory protective equipment, including provisions for planned limitations on duration of respiratory use for any individual as necessitated by operational conditions.
6. Bioassays and other surveys, as appropriate, to evaluate individual exposures to assess protection actually provided.
7. Records sufficient to permit periodic evaluation of the adequacy of the respiratory protection program.
8. Determination prior to assignment of any individual to tasks requiring the use of respirators, that such an individual is physically able to perform the work and use the respiratory protective equipment.

D. Program Implementation

1. Respirators will be affixed with a permanent number and assigned to individual employees when practicable. The assigned individual will be held responsible for all aspects of the respirator while it is in his possession. Shoud the respirator be found improperly stored, cleaned, or maintained, the individual will come under the same disciplinary action as he would for violation of any company established policy with termination of employment being the ultimate end.
2. A few respirators will be available for use should an unplanned event necessitate respiratory protection. The users of these respirators will come under the same requirements as the user who is permanently assigned a respirator except that he

will be required to disinfect the respirator after it has been cleaned.

3. A permanent steel storage cabinet with individual compartments will be provided. Plastic storage bags and cleaning and disinfecting supplies will be provided also.
4. Posted at the storage area will be a copy of the operating procedures regarding:
    1. Fitting the respirator
    2. Replacing the chemical cartridge
    3. Cleaning and sanitizing the respirator.
    4. Cleaning difficult to remove foreign matter.
    5. Replacing the inhalation valve connector.
    6. Replacing the exhalation valve seat

In addition, a meeting covering the above items will be held by each supervisor to ensure that every employee is capable of caring for a respirator. Also, SAFECO of Kingsport, Tennessee, a national respirator distributor, will be consulting with us to assure that proper training to use and maintain a respirator is provided.

5. The radiation safety officer or his designated representative will conduct a training session where the respirator user will be given proper fitting instruction, allowed to wear the respirator for a period of time, and finally, he will be subjected to a fast atmosphere. Also, proper methods of maintenance will be addressed.
6. Emergency use respirators or those maintained for unpalnned events will be checked once monthly for storage, repair, etc. These respirators will be cleaned, sanitized, and inspected for damage after each use.

Written procedures covering all appropriate items have been developed.

3.

The level of 50 mg/L is a working level and not an alarm level or limit as you seem to be indicating. We do have people who exceed this level on occassion, but there are no patterns and the predominant problem is sample contamination.

As to 50 mg/L being an arbitrary limit, I believe you will find this level a lower one than is used by most depleted uranium processing facilities. Information already furnished to your department indicated that this is the rule rather

3. (Continued)

than the exception. Additional support indicating this level is lower than necessary may be obtained by referring to the American Institute of Industrial Hygienist and the Department of Energy among others.

Currently most routine bioassay surveillance programs utilize a combination of urine sampling to detect soluble material and in vivo examination to detect any accumulation or build-up of depleted uranium in the lungs. This provides for a much more thorough check on any possible intakes. The use of excrete data alone to evaluate uptakes of depleted uranium is not recommended since it is extremely difficult or virtually impossible to make acceptable estimates of the lung burden from urinalysis alone. However, urinary excretion data, when supplemented by in-vivo examination resulting from an uptake of depleted uranium, allows a determination to be made of the efficacy of the program. TNS has had very good results in this area and the steps taken will further improve the results.

4.

Training of personnel in procedures for minimizing radiation exposure is receiving considerable attention by the radiation safety office and management. New employees are being indoctrinated as they report for work. Other employees are receiving instruction on the job in many cases and in safety meetings held by the radiation safety officer. If this is not satisfactory, we would welcome suggestions from your departments.

5.

Copies of some data from the continuous air monitoring program is being sent separately.

6.

A copy of the monitoring schedule for unrestricted areas is being sent separately.

As a note, four Eberline RAS-1 units are in operation at the perimeter of the facility and one remote unit is also in operation.

I most sincerely hope that the responses made to your letter of January 14, 1980 are adequate.

Sincerely yours,

R. J. McCracken

cc: Johnny Graves

TNS INC.
P.O. Box 158 Jonesboro, Tennessee 37659
615-753-4688

February 25, 1981

Mr. Stephen C. Brooks
Radiological Physicist
Division of Radiological Health
C2-212 Cordell Hull Building
Nashville, TN 37219

Dear Mr. Brooks:

The inspection report for your review of TNS, Inc., activities on November 18 - 20, 1980, was received on February 13, 1981. The following actions have been taken to insure full compliance with the Radioactive Material License number S-9009-F4 and "State Regulations for Protection Against Radiation".

(1) The services of AWC, Inc., were employed for the purpose of removing the thorium contamination from the process and support equipment. The TNS license, page 42, permits the "appropriate action to restore acceptable levels." The equipment was buried at the licensed site in Barnwell, S.C. The area was cleaned and reconditioned for other production related activities. TNS, Inc. will notify the State Division of Radiological Health before any controlled area is decommissioned and released for the public use.

(2) As was discussed at the time of this inspection, beta/gamma surveys are performed by the Health Physics staff as deemed an appropriate/necessary tool for determining levels of radiation, and the possible subsequent exposure to personnel. Surveys which are routinely documented include:

1. Waste shipping containers
2. Loaded transport vehicles
3. Shipping containers transported by common carrier

TNS does conduct beta/gamma surveys, although the license does not require these surveys to be conducted.

(3) The placement of the high volume air sampler is to obtain a sample of the general area in question, thereby reflecting what concentrations of airborne material all personnel in this area are exposed to, and not just a sole worker operating, for example, the blender. As was discussed at the time

(3) cont.

of this inspection, a portable "breathing zone" sampler is employed for determining the airborne material concentrations at individual duty stations such as the blender; this sampler, being worn by the individual for an entire work shift, is more indicative of what individual workers are exposed to for each particular job in their general work area than would be the high volume air sampler. TNS requested the authority to up-grade the air sampling program on January 26, 1981, in a license change. The new program will use local continuous sampling stations to evaluate the airborne radioactivity. This will replace the high volume "grab" sample program.

(4) TNS has a personnel monitor on order and scheduled for shipment on March 2, 1981. The unit will be installed at the exit from the change rooms. The efficiency, reliability and durability will be evaluated and additional monitors purchased as required.

(5) Personnel training is at this time a matter of top priority at TNS. A detailed manual which involved extensive research in content and design is the radiation safety training guide for the first line supervisory staff. These persons and all personnel are required to attend a 2-hour radiation safety training session. One area covered in these sessions is radiation exposure from metal products at this facility. Through these sessions, our weekly safety meetings, and knowledgeable supervision, the intention is to incorporate within each employee the philosophy "safety is a state of mind", so that every individual actively utilizes the radiation safety concepts put forth to him/her.

(6) The individual who received the over exposure in the 3rd quarter of 1980 was the subject of an evaluative report sent to the State, dated September 30, 1980. As stated in this report the pocket ionization chamber worn by the individual did not record the same level of exposure.
Our current TLD program requires evaluation of every employee's exposure at the end of each two (2) week period. There are provision for personnel rotation and restriction as exemplified by the evaluative report on the individual in question. There is no daily work operation known to TNS at this time which could result in the level of exposure received by this individual. All operating procedures, etc., have been reevaluated and re-emphasized since this occurrence. Even with the aforementioned problems, we believe a more than adequate job was done in controlling this individuals yearly exposure. The operators' yearly exposure by quarter has been listed for your evaluation.

(6) Cont.

1980 Exposure Expressed in Rems

	W.B.		SKIN
1st Quarter	0.714		1.974
2nd Quarter	0.910		3.545
3rd Quarter	2.159		9.651
4th Quarter	0.400		1.565
1980 Accumulated Dose	4.183		16.735
Lifetime Accumulated Dose		6.286 Rem	
Permissible Lifetime Dose		40 Rem	

NOTE:

To furthur emphasize our capabilities in controlling exposure, our records show the following number of badges in the indicated whole body exposure ranges for the period from January 1, 1980 to December 31, 1980.

BADGES	EXPOSURE RANGE
28	Less Than .010 Rem
29	.010 to .099 Rem
18	.100 to .249 Rem
25	.250 to .499 Rem
21	.500 to .749 Rem
15	.750 to .999 Rem
[illegible]	1.000 to 1.999 Rem
34	2.000 to 2.999 Rem
9	3.000 to 3.799 Rem
1	3.800 to 4.183 Rem

(7) The total number of wrist badges utilized by TNS was increased significantly in October, 1980. Results from these wrist badges, which are included for your review, indicate that our employees are not likely to receive a dose in any calendar quarter in excess of 25% of the applicable limits. TNS began utilizing extremity monitors in 1979 and results obtained at that time led to our present system of operator monitoring in the areas showing the highest potential for exposure.

(8) Immediately after your inspection, all twenty-three 1980 Eberline TLD reports were reviewed, and it was found that 39 out of 3960 badges submitted were reported by Eberline as being contami-

(8) Cont.

nated. (This calculates to 1% of the badges submitted). Since your staff's notation of this problem at that time, a concerted effort was applied to alleviate/eliminate the contaminated badge problem, and these efforts proved successful. The last four (4) badge reports have been totally free of contaminated badge indication. (One of these reports is attached for your review.) TNS has a policy already in effect which places responsibility for prevention of badge contamination on the workers; and, in the event of visible contamination being found on the badge by the wearer, first line supervision becomes responsible for having the badge decontaminated as soon as possible to assure a more accurate assessment of the wearer's actual exposure.

(9) Nine (9) "visitor" badges were being utilized at the time of this inspection as area monitoring devices. Proper records pertaining to the assignment of these badges are maintained in a separate logbook. This situation was improved as can be noted in the attached Eberline TLD report, showing the various badges which are used as area monitors.

(10) Badges which are reported by Eberline as being contaminated have a dose reading listed in the report which is incorporated into the individual's permanent accumulated dose. The dose recorded for this person is a conservative figure. The records indicate that a contaminated badge reading contributed to his/her recorded dose for the period. Considering that when an individual is known to have worked with radioactive material sans personnel monitoring, the accepted practice is to assign this individual the maximum permitted dose for the questioned period of time. The practice of accepting the contaminated badge dose for the records is not any more a conservative practice.

(11) TNS has an operating liquid waste process plant to remove the radioactivity from the discards to the waste pond. This activity meets the licensed discharge limits. The pond sampling data has necessitated TNS to contract with an engineering company to design and construct a new waste water treatment plant. The new facility will collect all the liquid effluent from the facility, remove all the contaminents to permit discharges into the environment. The NPDES applications have been submitted to the Division of Water Quality Control. A license revision will be submitted at an appropriate time to the Division of Radiological Health to coincide with the project schedule requirements.

(12) There were incorrect entries in the waste monitoring records due to an error in the calculations which increased the recorded concentrations. The personnel calculating this discharge have been instructed again in the correct procedure.

(13) Management/Administration changes have been made at TNS recently to significantly upgrade the quality of supervision and direction of this facility. The neglect to inform the State of these changes was unintentional, and every effort will be made in the future to assure information regarding changes be conveyed with all expediency. A current administrative flow chart is attached for your records.

(14) Signs reading "Every Container in This Area May Contain Radioactive Material" have been posted between restricted/unrestricted areas in all change rooms, and at other entrances to the process area (e.g., the outside fence gate).

(15) Enclosed is a copy of the document referenced in 1200-2-5-.14 (1) of "State Regulations for Protection Against Radiation", which was posted securely under glass at the employee entrance to this facility on the date indicated.

We request that any deviations identified in future inspections be specified. The identification of frequency, time and severity of any incident, will aid in our investigation and immediate corrective action.

Christensen
G. L. Christensen
Vice-President Operations

GLC:lbp

FROM JCG 1/27 TO CTW 1/29
BG
INFORMATION
SUGGESTIONS —— CH
APPROVAL
REPLY BY. ....
TO BE SIGNED BY ....

C2-212 Cordell Hull Building

January 29, 1981

TNS, Inc.
P.O. Box 158
Old Highway 11-E
Jonesboro, TN 37659

Attention: Robert Bagnoli, Vice-President

Gentlemen:

Thank you for the cooperation given Johnny C. Graves and me during the inspection on November 18 through 20, 1980, of the activities conducted under Radioactive Material License number S-9009-F4. After reviewing the data collected, it appears that certain of your activities were not conducted in full compliance with "State Regulations for Protection Against Radiation" and certain conditions of your license in that:

(1) Decontamination activities were performed which were not authorized by Radioactive Material License S-9009-F4.

✓ (2) The radiation safety program, as referenced in Condition 13 of your license, did not appear to be administered adequately to provide the maximum degree of protection for your employees.

Note: Beta, gamma level determinations were not used to minimize exposure to employees.

(3) Surveys for evaluating radiation hazards were not being adequately conducted, contrary to 1200-2-5-.10 of "State Regualations for Protection Against Radiation".

Note: The placement of the high volume air sampler in the blending and retort breakout area for small derbies, did not permit the proper evaluation of airborne radioactivity in that area.

(4) Radiation surveys were not performed as necessary, contrary to 1200-2-5-.10 of "State Regulations for Protection Against Radiation".

Note: Personnel survey capabilities were not available in change rooms.

(5) Personnel training in precautions or procedures to minimize radiation exposure was inadequate, contrary to 1200-2-5-.14(2)(a)2.(ii) of "State Regulations for Protection Against Radiation".

Note: It appeared that certain employees did not realize that exposure could be received while resting or leaning on derbies or lines of penetrators.

(6) An individual was exposed to radiation in excess of applicable limits, contrary to 1200-2-5-.03(1)(c) of "State Regulations for Protection Against Radiation".

Note: This refers to an overexposure during the third quarter of 1980.

(7) Personnel were not provided proper personnel monitoring devices, contrary to 1200-2-5-.11 of "State Regulations for Protection Against Radiation".

Note: Personnel handling radioactive materials were not provided appropriate monitoring devices for monitoring exposures to the hand and forearm.

(8) Personnel were not adequately instructed in the proper use of personnel monitoring equipment, contrary to 1200-2-5-.11 (2) of "State Regulations for Protection Against Radiation".

Note: As evidenced by personnel monitoring records, personnel did not appear to be adequately instructed in the precautions necessary to avoid contamination of personnel monitoring devices.

(9) Records of documentation of use of personnel monitoring devices were inappropriate, contrary to 1200-2-5-.22(1).

Note: This refers to records which documented area TLD badges as "visitor" badges.

(10) Personnel Monitoring records were not adequately maintained, contrary to 1200-2-5-.22(1) of "State Regulations for Protection Against Radiation".

Note: No estimates of personnel exposures were made for contaminated badges.

(11) Water discharged to the holding pond exceeded the concentration limits submitted in the license application and referenced in Condition 13 of your license.

(12) Records of waste disposal were not adequately maintained, contrary to 1200-2-5-.22 (2) of "State Regulations for Protection Against Radiation".

Note: This is in reference to improper entries on the wastewater monitoring records.

(13) Changes in administration and management were made without notification to the Department, contrary to information referenced in Condition 13 of your license.

(14) Posting at entrances into restricted areas was inadequate, contrary to statements mdae in applications and referenced in Condition 13 of your license.

(15) Posting of documents was inadequate, contrary to 1200-2-5-.14(1) of "State Regulations for Protection Against Radiation".

It is requested that the Department be informed within 15 days of the action taken to correct these deficiencies and to prevent their recurrence.

Several of the items of noncompliance indicated above have been called to your attention in letters reflecting the results of previous inspections. It appears that sufficient effort is not being exerted to prevent the recurrence of these items. Special attention will be given to your response concerning the method(s) and controls instituted to prevent such recurrence.

Sincerely,

Stephen C. Brooks
Radiological Physicist
Division of Radiological Health

SCB/JCG/tjo 1-5

cc: Jerry Hoynacki
By-Products Manager

1200-2-5-.14(1(a)6 requires that this document be posted within two (2) working days after its receipt in a sufficient number of places to permit workers involved in licensed activities to observe it and it shall remain posted for a minimum of five (5) working days or until all corrective action has been completed, whichever is longer.

1/29 JCG
1/29 E.C.A.
1/11 BG
2/12 EPW
JCG

TNS, INC.
Jonesboro, TN
S-9009-F4

On November 18 through 20, 1980, Edgar C. Ashley, Johnny C. Graves and I visited the above facility to conduct a re-inspection of the activities conducted under Radioactive Material License #S-9009-F4. The last inspection of this facility was conducted by Sally L. Hock on May 6 through 9, 1980. This license authorizes the processing of thorium nitrate tetrahydrate to thorium oxide, and storage incident thereto; the processing of UF_6 to UF_4, and the processing of UF_4 to uranium metal; the casting and machining of uranium metal; and the storage incident thereto of natural and depleted uranium.

Thorium production has been terminated with decontamination activites conducted in the thorium bay scheduled to be concluded by November 23. Decontamination activites are being conducted under the provisions of TNS's license with technical advice and training being provided by AWC, Inc. of Las Vegas, Nevada; president-Bill Ayres. AWC is licensed by the State of Nevada. The Thorium bay is to be decontaminated to unrestricted area limits before it is to become a part of the uranium production process. It should be noted that the Division was not notified of these activities by either AWC or TNS.

A preliminary conference was held with Robert Bagnoli, Vice President of TNS Operations; Jerry Hoynacki, By-Products Manager; and Jim BarlowManager of Health and Safety. We were informed of the managerial changes which had been made since the inspection of May 6 through 9, 1980 (See Attachment). In addition, the breakdown of By Products Division is as follows:

Jim Barlow, Health and Safety Supervisor
Sally Hock, R.S.O.
Brad Squibb (technician) Plant Standards
Tim Wright, technician

TNS has only 1 stock holder, that being the Aerojet Ordinance Corp. of Downy, California, with the takeover being completed in January, 1979.

R. Bagnoli reviewed the production process as it applied to the application materials. TNS is not currently converting UF_6 to UF_4. Approximately 48-50 drums per wk (Capacity 55 gallons) of UF_4 are being received from the U.S. Operation at Paducah. TNS currently has an inventory of 75 tons of UF_6. TNS makes 2 sizes of derbies or ingots: 400 lb. and 1100 lb. Billets, or molded Uranium-titanium alloy ingots, are shipped to Reactive Metals, Inc. of Astabula, Ohio for extrusion. The extruded rods are returned to TNS for the production of penetrators. TNS has submitted a proposal to the U.S. Army for production of a larger projectile.

The production of the larger projectiles will require installation of a "rolling mill press" to convert the billets to rods. The doubling of production capacity will necessitate the expansion of the penetrator shop, construction of a waste water treatment plant, and the purchase of adajacent land to accomodate an expanded facility.

TNS is now operating 3 shifts. All processes except waste processing are conducted on the 2nd and 3rd shifts. There are no health physics personnel employed on either the 2nd or 3rd shifts; however, emergency notification procedures exist for radiation related accidents on these shifts.

On a walk-through of plant operations we were accompanied by J. Hoynacki and J. Barlow. In the burial waste area, a female was noted to be processing L.S.A. waste by hand; she did not possess a ring or wrist badge. All personnel in this area were wearing T.L.D. whole body badges (as supposedly all plant production area personnel do). This area temporarily stored approximately 75-80 drums of L.S.A. The reading obtained from Ludlum Model 3, #1877 was .3 mr/hr (corrected) 18" from a barrel. Given the "infinite plane" nature of the source this reading was consistent for the general work area.

In the UF_4Mg blending and retort loading area (small derby), the continuous automatic air sampler was not placed where the greatest hazard form airborne contamination existed. In the adjacent derby breakout area a drill operator obtained core samples from small derbies for lab analysis. He did not have a ring or wrist badge even though his work required that his hands constantly remain in close proximity to the derby. It should be noted that most plant personnel were observed wearing gloves. When questioned by J.C.G. whether he had received instruction as to how to minimize exposure to himself while performing his job, he replied that he had(while resting his hand upon the derby for the duration of the interview)(Ludlum Model 3 reading for large derby-3 mr/hr (corrected) on contact).

As noted in SLH's inspection of May 6 through 9 the vacuum~~e~~ furnace area is an area in which workers consistently receive high whole body exposures. Fixed and removable contamination levels are consistently over the limits for restricted areas as determined by TNS (It should be noted that due to the erratic nature of the Ludlum 16 with scintillation probe, Alpha measurements were not attempted). Hoynacki indicated that the depleted uranium daughters are isolated and/or released in the vacuum melt process. This, he says, contributes to the high whole body exposures received by workers in this area. Also near the vacuum~~e~~ furnace and crucible preparation and breakout area were a rack of derbies to be melted in the vacuum~~e~~ furnace. Simple engineering controls to reduce beta-gamma exposure were noticeably absent. Approximately 20-25 drums of LSA were being stored in the area adjacent to the large derby breakout area. ?

In the yard area (controlled) between the main production building and the Penetrator Shop, were burial waste awaiting shipment, full and empty UF_6 cylinders (10 tons), and assorted equipment. Model 3 readings for full UF_6 cylinder 0.9 mr/hr (corrected); for empty cylinder 1.3 mr/hr (corrected). The yard area serves in part as a contamination "hose-off" area for waste shipments. J. Hoynacki indicated that run-off was collected in a sump and pumped through the waste-water filtration system, to the holding tank, and finally to the holding pond.

In the Penetrator building, loose contamination appeared minimal. Near the degreasing operation a maintanence person was observed to be sitting on a bin of penetrators while reading. Many operations in the penetrator shop require hand manipulation of the penetrators. Some of the operators were not wearing gloves. While no ring badges were observed, we were later informed by J. Barlow that wrist badges were being used by those same people. There are 6 continuous manual air samplers in the penetrator shop, each were placed as to be representative of breathing zones.

Each penetrator in the rough and fine OD area is placed by hand into a micrometer to check specifications. A finishing OD operator was observed to handle on the average 2 penetrators per minute. Model 3 reading for 1 finished penetrator-10 mr/hr (corrected) on contact. Ring badges were not present on these operators.

JCG interviewed Johnny Bettis, Union President, who is a member of the Health and Safety Committee. As a member of this Committee, Mr. Bettis contends that a list of hazards to personnel were compiled by the committee, but that he has seen no action taken relative to that list. Several items of conern to Mr. Bettis were the excessive smoke produced by the chamfer operation, excessive dust in the large derby breakout area, and green salt on the floor of the blending operation for the large derbies. Mr. Bettis agreed to give us a copy of the list which was submitted by the Health & Safety committee; however, Mr. Bettis did not restablish contact with us as agreed.

During the record review phase of our re-inspection JCG asked to see signed personnel exposure histories for those workers who in the 2nd and 3rd quarter of 1980 received a dose in excess of 1250 mr/Qt. J. Barlow indicated that he did not have these histories and conferred with JCG on how compliance with 1200-2-5-.03(2) of "State Regulations for Protection Against Radiation" might be achieved in the future. The following are documented examples of concern as a result of our record review:

Personnel Monitoring (Eberline TLD)

badge	name	type	Date of issue	Cumulative Skin Expsoure for 3rd Qt.
*0153		WB	9/19/80	9551 mr
8022		WB	7/11/80	contaminated; no estimate of exposure
0249		WB	6/27/80	contaminated; no estimate of exposure

Some high exposure badges were noted which were listed as visitor badges. when asked about these they produced a **

Fixed contamination in controlled areas continue to exceed the limits established in the application:

Instrument: PAC-4G
Counting eff: 50%

Area	Date of Survey	$dpm/100cm^2$	limit $dpm/100cm^2$
Contaminated	9/2/80 - 9/5/80	6,000	5,000
Restroom	9/8/80 - 9/12/80	6,000	5,000
Contaminated	9/2/80 - 9/5/80	7,000	5,000
Change Room	9/8/80 - 9/12/80	6,000	5,000
Vacume Furnance	9/2/80 - 9/5/80	40,000	15,000
	9/8/80 - 9/12/80	18,000	15,000

*This overexposure was reported in Sally Hock's letter to the Department dated September 30, 1980.

Due to a restriction in time, a complete and thorough review of air monitoring records was not possible. The following weekly averages of U^{238} concentrations indicate that further investigation is warranted to determine if limits are being exceeded on a quarterly basis.

** log which indicated that certain of these badges belonged as area badges and not as visitor worn badge

(Schedule RHS 8-1, Table I, Column 1
limit U^{238} 1X10E-10 uCi/ml in air)

Sampling Instrument: RAS-1
Counting Instrument: FC-2 Gas Porporational Flow Counter
Procedure: Total Alpha count after one week decay.

Penetrator Shop #2 Station

Sample Date	Concentration uCi/ml
10/3/80 - 10/10/80	9.26X10E-11
10/13/80 - 10/18/80	1.51X10E-10
10/20/80 - 10/25/80	1.32X10E-10
monthly avg.	1.25X10E-10

TNS monitors wastewater before it is discharged into the holding pond. TNS has reduced its flow rate to the holding pond from 36, 000 gal/day to 12,000 gal/day. TNS restricts itself to the limits of concentration for effluents containing U^{238} to unrestricted areas for wastewater discharged into the holding pond. In the event of an accidental release from the holding pond, concentrations will be less than that required of effluents to a unrestricted area. Below is a portion of monitoring records for wastewater being released to the holding pond:

(Schedule RHS 8-1, Table II, Column 2
limit U^{238} 4X10E-5 uCi/ml in water)

this information is exactly as it appears in the TNS records. JCG

Date	Location	Counter eff.	counts	ph	uCi/ml	dpm
10/17/80	Drain #2	.49	213	3.05	435	4.06X10E-4
10/3/80	Drain	.49%	62	9.2	127	1.19X10E-4
6/4/80*	Drain	.48%	43	7.8	90	8.4X10E-5

J. Barlow confirmed in a phone conversation of 11/25/80 that the records were incorrectly prepared. TNS is not meeting its committment for releases to the holding pond as evidenced above. No creek samples exceeded the limit for the 2nd and 3rd quarters of this year. Concentrations of U^{238} upstream exceeded those downstream on occas ion.

The following representatives of TNS were present at the closing conference: Bob Bagnoli, R.A. Schell, J. Hoynacki, Jim Barlow, and Sally Hock. JCG reviewed those items of non-compliance items noted in SLH's letter of August 25, 1980 and discussed with TNS's representative's the corrective action taken with respect to those items. New items of concern were discussed and recommendations were made. Program violations which will be noted by the department are as follows:

(1) Inadequate surveys. High volume air samples were not being made in the areas of greatest hazard to airborne contamination.

(2) Failure to notify this Department of changes in management and the Radiation Safety Program as specified in application materials.

(3) Surveys were not utilized to maintain exposures ALAP. Beta, gamma surveys were not being used to minimize exposure to workers.

(4) Inadequate instruction for personnel monitoring. Wrist and ring badges are consistently being contaminated.

(5) Over exposure of personnel. An individual received an skin exposure in excess of 7½ Rem for the 3rd Quarter.

(6) Incomplete personnel monitoring records. There were no estimated exposures for contaminated whole body badges.

(7) Lack of personnel monitoring. Workers whose work involved hand manipulation of radioactive materials were not provided proper personnel monitoring devices.

(8) Inadequate posting. The requirements of 1200-2-5-.14(1) were not met. Also no posting at entrances to restricted areas.

(9) Participation in activities not authorized by license. The decontamination of the Thorium bay to unrestricted levels.

(10) Inproper personnel monitoring records. Area monitoring TLD badges were referred to as "visitor" badges.

(11) Violation of license condition. Waste water discharges to the holding pond were in excess of 4X10E-5 uCi/ml.

(12) Inadequate survey records. Wrong counting efficiencies listed for gas flow proportional counter. Erroneous conversion of dpm/ml to uCi/ml.

(13) Lack of surveys. There were no means of survey for personnel existing from restricted areas (e.g. change rooms).

(14) Inadequate surveillance of operations on 2nd and 3rd shifts. Health Physics personnel are absent on these shifts and supervisory personnel are not adequately trained to recognize potentially hazardous situations and the proper corrective action required.

Following the closing conference, JCG, ECA and I met with Bill Ayres, President of AWC, Inc., to discuss his company's decontamination activities at TNS. It was not concluded at this time whether Mr. Ayres was guilty of any improprieties pending investigation; however, he was informed that the Department would have to approve any future activities in this State. It is doubtful that the decontamination of the Thorium Bay to unrestricted levels is authorized under TNS's license. TNS will be asked to submit records of personnel monitoring, surveys and personnel training related to these activities.

Summary: The radiation safety program is making progress. The addition of Sally Hock as R.S.O. has to be considered a positive step. Areas of concern in the program are—the—restructuring of the Radiation Safety program within the management framework—and the lack of cooperation between this program and others in reducing exposures to personnel, e.g. the Development of engineering controls to reduce exposures. Although health and safety training activities by the radiation safety program has increased, workers still exhibit a lack of training and/or awareness. As health physics personnel cannot supervise operations at all times, greater training for foremen and allied supervisory personnel is needed.

SCB JCY
1/7/81

Attached to this report are examples of certain records which were copied at the time of the inspection. Also are some sketches of areas relati

Dr. **Schell**. Thank you, Mr. Chairman.

Mr. **Gore**. We're going to take a 5-minute break to give the reporter a rest, and then we'll come back with Dr. Karl Morgan as our next witness.

[Whereupon, a short recess was taken.]

Mr. **Gore**. The subcommittee will come to order.

I'd like to call as our next witness Dr. Karl Morgan, professor emeritus at the School of Nuclear Engineering at the Georgia Institute of Technology in Atlanta.

Dr. Morgan, if you will come forward, we're delighted to have you here today, and if you would raise your right hand and repeat after me? Do you swear the testimony you're about to give is the truth, the whole truth and nothing but the truth, so help you, God?

Dr. **Morgan**. I do.

Mr. **Gore**. Thank you very much, and welcome.

Without objection, the entire text of your prepared statement will be included in full in the record.

[Prepared statement of Dr. Karl Morgan follows:]

COMMENTS REGARDING WORKING CONDITIONS AT TENNESSEE NUCLEAR SPECIALTIES PLANT IN JONESBORO, TENNESSEE BY DR. KARL Z. MORGAN*

My Qualifications to Address This Subject

1. I have been working with ionizing radiation for 50 years (as a cosmic ray physicist from 1931 to 1943 and as a health physicist from 1943 to present).

2. I was one of a group of 5 at the University of Chicago in the early World War II years which comprised the first health physicists.

3. I was Director of the Health Physics Division at Oak Ridge National Laboratory for 29 years and have been a professor at Georgia Institute of Technology the past 9 years.

4. I was the first president of the Health Physics Society (US and Canada) and of the International Radiation Protection Association and as a result am often referred to as the father of health physics.

5. I was an active member (now emeritus member) of the National Council on Radiation Protection and of the International Commission on Radiological Protection for 20 years.

6. I was chairman of the subcommittees on Internal Dose of both NCRP and ICRP for 20 years. These committees set the permissible levels for body burdens and concentrations of all the common radionuclides in air, water and food. Essentially these same levels are used today by the Nuclear Regulatory Commission in its regulations.

Lack of Conformance with Good Radiation Safety Measures at TNS

I have examined and evaluated the radiation safety programs at numerous nuclear operations over the past 38 years and from the information furnished me by the staff of Senator Albert Gore on the TNS plant I can only conclude there was a serious lack of conformance with good and accepted radiation safety measures and that the working conditions from the standpoint of health physics have been among the worst of any with which I am familiar. I believe some of the employees of this plant have been subjected to serious health hazards and that appropriate measures have not been taken to lessen or remove risks of serious health problems and fatal diseases that can be expected as a consequence. The risks and dangerous working conditions extend beyond health physics into the area of industrial hygiene where I believe the most elementary principles of good health and safety have been ignored. However, I will limit this discussion to the poor working conditions related directly to health physics. I can, of course, only speak for myself but it seems evident that some of the guidelines of the Nuclear Regulatory Commission have been ignored and on some occasions their regulations have been broken. The recommendations of both the NCRP and of ICRP have not been complied with and no consideration has been given to what is perhaps the most important recommendation of ICRP, namely ALARA (keep all exposures As Low As Reasonably Achievable).

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* Presented at hearings of Subcommittee on Investigations and Oversight in the Rayburn House Office Building, Washington, D.C. December 8, 1981.

I was not furnished specific data on air and water concentrations of uranium and thorium at the plant (μg/l or μCi/l) or of surface contamination (μg/100cm^2 or μCi/100cm^2 or DPM/100cm^2) but I hope such data are collected regularly and are on record. However, from the extremely high urine counts for some of the employees and from comments in the reports furnished me, it is evident that some of the operations at this plant are extremely dusty. Since many of the urine counts exceed what are considered maximum permissible concentration (MPC) values established by ICRP and the other standards setting bodies, it is almost certain the values for air and possibly for water at the plant exceed the MPC values of ICRP, NCRP and NRC.

I have not seen any nose swab count data (I hope such data are on record) but this would be very useful in locating the areas of greatest concern and indicating immediately those cases in which the respirators are not used properly or do not function in a satisfactory manner. I understand that lung counts have been made on some of the employees (perhaps by the Helgerson Corp.) but I have not been supplied with these data. Similar counts should be made of the mid-body section to aid in estimating the organ burdens of uranium and thorium in the liver, kidneys and bone.

I would consider it very important to have on record data on particle-size distribution of the dust particles collected from the air but no such data have been furnished for my evaluation (I hope they exist). Such data, along with data on fecal analyses, would be very valuable in estimating which portions of the respiratory tract (nasal-pharyngeal, trachea-bronchial and lower lung compartments), gastro intestinal tract and other body organs are at greatest risk.

I have not been furnished information on the type of respirators that are in use or have been used by TNS but it is clear that they have not provided adequate protection to many of the employees and something should be done immediately to correct this situation. The difficulties of wearing various kinds of face masks, respirators and pressure suits have long been recognized by industrial hygienists and health physicists - especially when they are worn continuously for long periods of time. I have found it is unreasonable to expect a person to wear these protective devices more than an hour at a time except for emergencies and unusual or very infrequent occasions. It is for this reason that many operations in a well conducted plant are forced to use hoods, dust boxes, remote equipment, etc.

Hopefully, TNS takes the usual or obvious precautions in preventing body intake of uranium and thorium but, again, the information furnished me does not address these questions. Here I have in mind such things as:

1. Strict regulations and enforcement in the use of specified respiratory devices,
2. careful fitting of face masks and respirators on an individual basis,
3. prohibit persons with beards from working in areas where face masks(and some respirators) are required because of problems of proper fitting, etc.

Scanty information furnished me suggests that regulations against eating, drinking and smoking in dustry areas and regulations to prevent the spread of uranium and thorium contamination outside the control areas are not strictly enforced. One might ask for example:

1. Is food permitted in the radiation control area?
2. Are bottled drinks allowed in the area? (I hope not for in such case radioactive contamination can spread into the public domain).
3. Are cars and homes surveyed regularly for contamination?
4. Are there filters on the exit air ducts from the dusty buildings?
5. What kinds of filters are in use and what is the dust load on these filders?
6. Have levels of uranium and thorium been measured in any animals living in the environment of the plant, etc?

Lack of Management Concern for High Doses and Serious Health Risks to Employees

No health physics or industrial hygiene safety program can be successful without full cooperation of plant management at all levels of supervision. It seems evident in this case that certain levels of plant management were not aware of, did not understand the significance of and/or did not care about serious health risks to which their employees were subjected in the course of their employment at TNS. It is possible that plant management is not acquainted with the vast amount of animal and human data on the dangers of excessive exposure to uranium and thorium but I believe this is no wise relieves or excuses any plant manager of the requirement for safety of his employees and the necessity of seeking the advice and employing specialists to assist him in providing adequate safety for all his employees. It is difficult to appreciate how plant management could be so oblivious to the seriousness of continuing and persistent extremely high levels of uranium and thorium in the urine of its employees. Not only are the internal doses of many of the company employees very high, but the external doses in some cases have been much too high. The NRC has indicated that conformance with ALARA can be judged in part by considering each person-rem to be worth $1000. In other words, if a person-rem can be avoided by measures that cost less than $1000, very serious consideration should be given to implement such measures. When applying this criterion to the total external and internal dose of radiation received by some of the employees, it is seen that their jobs are rather expensive and they may be costly in terms of ill health and long range somatic and genetic damage.

Inadequate Dosimetry and Incomplete Dose Estimates

If the information furnished me describes properly the dosimetry in use at TNS and its evaluation by TNS, I am forced to conclude it is far from adequate. First of all, I found no information on beta dose from external exposure. It is well known that in this case the beta dose from external exposure is many times that of gamma exposure from uranium. For example, over 35 years ago I prepared a chapter for a text book in which I showed that at the surface of an infinite slab of uranium the distribution of dose is 290 rem per hour of beta, 17,000 rem per hour of alpha, 17 rem per hour of secondary electrons, 2.4 rem per hour of gamma and 11 rem per hour of bremsstrahlung radiation. As a result of such calculations we were always very careful in avoiding beta radiation from uranium when I was at Oak Ridge National Laboratory. An adjustment to the above dose rates would have to be made for the amount of depletion of U-234 which contributes slightly more than half the activity of the natural uranium mixture but only slight adjustment would be required for depletion of U-235 (which contributes less than 5% of the natural uranium activity). From the above and from some of the external dose readings of the film badges or TLD's, it is evident that in some cases the workers spent a considerable part of a work day very close to large objects made of uranium. Remote operating equipment and shielding should be used to reduce these doses. The large alpha dose presents no problem from external exposure because alpha rays do not penetrate the skin but on this same score they are responsible for the principal radiation problem when uranium is contained or incorporated inside the body because all the alpha energy is absorbed locally in body tissue. The present permissible body burdens and values of MPC for air, water and food for depleted or natural uranium are based on the chemical toxicity of uranium and resulting kidney damage. Although the alpha dose to the kidneys in the TNS cases I examined was about equal to the external gamma dose recorded by the TLD meters (and should be added to it) it does not reflect the concern many of us have for the large chronic dose from uranium and thorium to the bone and liver which act as reservoirs for the heavy metals. For example, 85% of the soluble uranium (typified by the levels in the urine) in the body is fixed in bone where it has a biological half life of 300 days compared with the 6.5% contained in the kidneys with a biological half life of 15 days. The records furnished me indicate that some of the workers have been averaging urine levels of 50 to 80μg/l. My caluations indicate that this corresponds to an average skeltal dose of 120 rem per year for U-238 that is completely depleted of U-234 and U-235. Even if such a person left the TNP a year ago, his dose rate would have dropped by only 43% (i.e., down to 52 rem per year) and he would continue to be irradiated such that his lifetime dose would be 141 rem. It seems to me that the TNP health physicist (if there is such an employee) should consider all the radiation dose received by plant personnel and should insist that no annual doses exceed the permissible limits. Finally, there seem to be some serious discrepancies in the various recorded dose records. Even though these discrepancies indicate lower final recorded doses than those originally recorded, I would like to think these are careless errors.

Consequences of Radiation Exposure at Low Levels

I will not dwell on this subject except to refer to reprints of a few papers I have published. These show that the risk of cancer from low level exposure to ionizing radiation is far greater than was generally considered a few years ago and that the risk estimates of the BEIR-III (1980) committee main report may be low by an order of magnitude. I believe there is no safe level of radiation exposure and there is always some risk no matter how low the exposure so it is important that we keep all exposures ALARA. Perhaps it would be a bit sobering to some of those who take a rather cavalier attitude regarding low level exposure to ionizing radiation to note that the BEIR-III report (1980) and the GAO report (1981) call attention to the fact that for several types of cancers among human populations the cancers expected per rem are greater at low dose than at high dose and to recall that thorium was once considered to be harmless because of its long half life but decades after extensive use of thoratrast (thorium oxide) as a contrast medium in diagnostic x-ray it was discovered that a large number of persons were dying of cancer of the liver from irradiation by thorium deposits in the liver. The average latency period of liver and bone cancers is about 30 years and persons working with thorium and uranium should take reasonable precautions in order not to compromise their future of a long happy life.

Mr. Gore. We invite you to proceed with either a summary or as much of the statement as you see fit, so please proceed.

STATEMENT OF DR. CARL MORGAN, PROFESSOR EMERITUS, SCHOOL OF ENGINEERING, GEORGIA INSTITUTE OF TECHNOLOGY

Dr. Morgan. Congressman Gore, first of all, I congratulate you for having these hearings, and for your interest in the well-being of the citizens of your State.

I've been working with ionizing radiation for 50 years, and I was one of a group of five of the first health physicists at the University of Chicago in the early war years.

I was director of the health physics division at Oak Ridge National Laboratory for 29 years, the first president of the Health Physics Society and of the International Radiation Protection Association. As a result, I'm often referred to as the father of health physics. And I was an active member of the National Council on Radiation Protection and Measurements and of the International Commission on Radiological Protection for 20 years, and as such, I was chairman of the committee that made the calculations and set the permissible levels for all the radionuclides of concern, including uranium and thorium, and we prepared this Handbook on Internal Dose of ICRP and similar handbooks for the National Council that serve as the basis of standards of the Nuclear Regulatory Commission.

I mention this not to brag, but rather because there are many so-called experts that may be an expert in one field that dare to discuss subjects in others. This is the only field which I know a little about and which I feel some confidence in making this testimony.

I have no ax to grind. I'm not here as a consultant for either of the parties that are contesting these issues. I'm only concerned with good health physics for the safety and well-being of the citizens of our country.

I've examined and evaluated the radiation safety programs at numerous nuclear operations over the past 38 years, and from the information furnished me by the staff and by you, Congressman Gore, I feel that I can only conclude that there is a serious lack of conformance with good and accepted radiation safety measures, and that the working conditions from the standpoint of health physics have been among the worst of any with which I am familiar.

I believe some of the employees of this plant have been subjected to serious health hazards, and that appropriate measures have not been taken to lessen or remove risks of serious health problems and fatal diseases which can be expected as consequence.

In the hearings that I've witnessed so far and heard, it's been suggested that these conditions were not serious. I take issue with that. I feel that the conditions are very serious. The risks and dangerous conditions extend far beyond health physics into the area of industrial hygiene, where I believe the most elementary principles of good health and safety have been ignored. I also worked in that field some years and was on the board of the American Industrial Hygiene Association, and I'm very familiar with those in that field.

However, due to the restrictions of time and because my principal expertise is in the field of radiation, I will limit this discussion to the poor working conditions related directly to health physics.

It seems evident that some of the guidelines of the Nuclear Regulatory Commission have been ignored, and on some occasions there regulations have been broken. I was not furnished specific data on the air and water concentrations of uranium and thorium at the plant, or of surface contamination, but I hope such data are collected regularly and are on record.

However, from the extremely high urine counts and from comments in the reports furnished me, it is evident that some of the operations at this plant are extremely dusty. Since many of the urine counts exceed what are considered to be maximum permissible concentration values established by the International Commission and by the other regulatory bodies, it is almost certain that values of air and possibly of water—that is, the permissible values—exceed those that are considered to be safe and acceptable.

I would also say that I'm somewhat disappointed with the lack of enforcement of regulations on the part of the Tennessee Division of Radiological Health and with them not taking more initiative in carrying out the principles and precepts that the Nuclear Regulatory Commission expects when they designate a State as a compliance State, as is the case with Tennessee.

I have not seen any nose swab count data, but this would be very useful in locating the areas of greatest concern and indicating immediately those cases in which the respirators are not used properly or do not function in a satisfactory manner.

I understand that lung counts have been made on some of the employees. Similar counts, however, should be made of the midbody section to aid in estimating the organ burdens of uranium and thorium in the liver, kidneys, and bone.

I would consider it very important to have on record data on particle-size distribution of the dust particles collected. Such data, along with data on fecal analysis, would be very valuable in estimating which portions of the respiratory tract are at risk; that is, the nasal-pharyngeal, the trachea-bronchial, the lower lungs, and then the question of insult to the gastrointestinal tract and other body organs. We need this additional data in order to completely estimate the risk that we can expect to show up in the next 20, 30, 50 years.

I've not been furnished information on the type of respirators that have been in use by TNS, but it is clear that they have not provided adequate protection to many of the employees, and something should be done immediately to correct this situation. The difficulties of wearing various kinds of face masks, respirators, and pressure suits have long been recognized by industrial hygienists and health physicists. I've found from my own experience that it is unreasonable to expect a person to wear these protective devices more than an hour at a time, except for emergencies. It's for this reason that the better operations, the better-conducted plants, are forced into the use of hoods, dust boxes, remote equipment, and so forth.

I'll have to leave out some of this in the interest of time.

There are many questions I would like to ask, such as:

Is food permitted in the radiation control area? Of course, are these rules enforced, if they have such rules?

Are bottled drinks allowed in the area? I would hope not, because in such case, the contamination would spread into the public domain.

Are cars and homes surveyed regularly for contamination?

Are there filters on the exit air ducts from the dusty buildings?

What kind of filters are in use, and what is the dust load on these filters?

Have levels of uranium and thorium been measured in animals and other living organisms in the environment?

Such questions would tell us whether or not the hazards have spread beyond the environs of the plant itself.

No health physics or industrial hygiene safety program can be successful without full cooperation of plant management at all levels of supervision. It seems evident in this case that certain levels of plant management were not aware of, did not understand the significance of, and/or did not care about serious health risks to which their employees were subjected in the course of their employment at TNS.

It is possible, of course, that plant management is not acquainted with the vast amount of animal and human data on the dangers of excessive exposure to uranium and thorium, but I believe this in no way relieves or excuses any plant manager of the requirement for the safety of his employees.

It is difficult to appreciate how plant management could be so oblivious to the serious continuing and persistent extremely high levels of uranium and thorium in urine of its employees. Not only are the internal doses of many of the company employees very high, but the external doses in some cases have been much too high.

The Nuclear Regulatory Commission has indicated that conformance with ALARA can be judged in part by considering each person-rem worth $1,000. When applying this criterion to the total external and internal dose of radiation received by some of the employees, it is seen that their jobs may be costly, not only in terms of ill health and effects that will show up in terms of malignancies later on, but in dollars and cents.

If the information furnished me described properly the dosimetry in use at TNS and its evaluation by TNS, I am forced to conclude that it is far from adequate. First of all, I found no information on beta dose from external exposure. It's well known that in this case the beta dose from external exposure is many times that of gamma exposure from uranium.

Then, skipping over some, in the interest of time:

The present permissible body burdens and values of maximum permissible concentration for air, water and food for depleted or natural uranium are based on chemical toxicity of uranium and the resulting kidney damage.

Now, here you mentioned Paul Morrow at the University of Rochester; I work with him. I worked with others that were there before him, Hodges and with John Hirsch and it was in meetings I had with them in the early period that we chose values such as the 30 micrograms per liter of urine, and these were based on the chemical insults, the chemical damage which would be expected to appear early.

Also, as director of the Health Physics Division at Oak Ridge, we did some research in the field. We carried on studies. Ed Struxnis and Dr. Bernard they carried on studies with persons who had been injected with uranium, and this data led in part to the present levels that are used based on chemical toxicity.

However, although the alpha dose to the kidneys in the TNS cases I examined was about equal to the external gamma dose recorded by the TLD meters—and should, of course, be added to it—it does not reflect the concern many of us have for the large chronic dose from uranium and thorium to bone and liver, which, of course, act as reservoirs of the heavy metals in our bodies; that is, we take these heavy metals into our system and we have reservoirs, we have tanks that hold onto the trace elements such as uranium and thorium, and supply those that happen to be needed at certain times in the operation of our bodies.

For example, 85 percent of soluble uranium in the body is fixed in bone, where it has a biological half life of 300 days. Compare this with only 6.5 percent contained in the kidneys with a biological half life of 15 days. So from the chronic point of view, from the risk of cancers that may show up over 30, 50, 60 years later, it perhaps is not the kidney at risk but it is other organs of the body, such as bone and liver and the gastrointestinal tract, to some extent, which I'll discuss later.

The records furnished me indicate that some of the workers have been averaging urine levels of 50 to 80 micrograms per liter.

Now, here I choose to deviate a bit from the test I presented. I arrived here about an hour before the hearings began, so I did some quick, back-of-the-envelope calculations on a specific case. Rather than take some hypothetical case and make estimates using my own risk estimates, I took one of the individuals, a Mr. Carter, who was 1 of the 23 employees whose names were supplied to me, and his average dose over a period of time of 51.25 micrograms per liter concentration in the urine, and then, rather than use my estimates of risk, as I did in the printed text, I used the International Commission of Radiological Protection Handbook on Internal Dose, the handbook on the NCRP values are based now, and made calculations using their figures, which I think in many instances underestimate the risk.

But making use of these—and this was for this Mr. Carter—his average exposure from January to April of this year, I find then that the dose rate to the kidney was 1.4 rems per year, to the bone it was 3.9 rems to the year—and this dose to the bone drops down very slowly because it has a biological half life of 300 days, so even if he were to quit work today, a year from now he would be getting 43 percent of the dose he got the last day he was at the plant.

And then here's the thing that was really shocking. Taking the fact that only 3 times 10 to the minus—pardon. As a professor, we use power terms. Only three parts per hundred thousand——

Mr. GORE. Thank you.

Dr. MORGAN [continuing]. Of the uranium that passes through the GI tract gets into the kidney, or passes across following that route. Using that figure, it turns out that the average dose or dose rate to the colon of this man on a year basis would be 3,700 rems per year. This would be his dose rate if he continued at this rate, as he had the average, for these months of this year. Then, of course, it's recorded in his record that he had an external gamma dose of 1.7 rems—that's given—and then using some of my early calculations on beta dose, I estimate that his beta dose, which was not recorded, would be 46 rems per year. This would be to the dermal layer of the skin, where the malignancies of consequence would be expected to occur, the malignant melanomas that don't respond well to medical treatment.

And using such numbers, I feel that it would be almost certain that, if he doesn't die from an automobile accident or from some other cause, he could anticipate, if he's an average person, that he would die of radiation-induced malignancy sometime later on in life.

Mr. GORE. You're not saying that's a likelihood?

Dr. MORGAN. I'm saying that the probability is greater than 50 percent.

Mr. GORE. Is that right?

Dr. MORGAN. But when we say this, we mean, of course, that man has sort of a bell-shaped distribution.

Mr. GORE. Yes.

Dr. MORGAN. Ten percent may wait for 50 years or 60 years, another 10 percent might show up these malignancies in 10 years, but this is the mean value based on the mean doses that he had during these months of this calendar year.

Mr. **Gore**. So what you're saying there, if I may interrupt briefly?

Dr. **Morgan**. Yes, indeed, to be sure.

Mr. **Gore**. It's that the urine samples represent a convenient way to test and monitor, and should not be taken as an indication that the principal cause of concern is the kidney because, even though that's a cause of concern, a high urine sample also implies even higher concentrations in other parts of the body where measurement is extremely difficult. Are you saying that?

Dr. **Morgan**. Yes, sir, that is exactly correct.

Mr. **Gore**. All right.

Dr. **Morgan**. What I'm saying is that the urine count indicates something about the solubility of the uranium that was taken into the body, and using these figures in the International Handbook—and they're the same figures in our National Handbook, and the figures and the values on which the NCRP values are presently based—using these data, one can show that from a chronic point of view, the risk is primarily to these other organs, to the bone, to the liver, and then because these levels are maintained in the urine for a period of months here—these were averages over these months—it means that the colon—the gastrointestinal tract is receiving a terrific dose, because only 3 parts in 100,000 passes from the GI tract to the kidney, you see. The rest of it's going along through the GI tract, eradiating the GI tract.

And I should say in making this calculation, getting this extremely high dose, this was using the values in the handbook, which assume that only 1 percent of the alpha dose is effective and that the GI tract is in line with a mucoblanket that provides protection. So I could be much less—I could find values of risk that are much higher than that. That's what I gave in the written report for the bone, for example.

But these, I think, would be sobering numbers to think about, and I feel that if a company, if an organization, is going to carry on work of this type, it should hire some specialists. It should hire a health physicist that can make these calculations, can interpret them in terms of the true chronic risk, as well as the acute risk to the kidneys of the employees.

We're concerned, or I would be concerned, about what happens to members of my family, not just during the next 5 or 6 years they're working at the plant, but what's going to happen over 30, 40, or 50 years later, especially if they're younger members.

The present permissible body burdens and values of maximum permissible concentrations for air, water, and food for depleted or natural uranium are based on the chemical toxicity, as I said, but those values we'll not go into here, though I did, as I indicated, meet with a group at Rochester in the early days when we set the present standards.

It seems to me that TNS health physicists—that is, if there is such an employee—should consider all the radiation dose received by plant personnel and then should insist that no annual doses exceed the permissible level.

Finally, there seem to be some serious discrepancies in the various recorded doses. Even though these discrepancies may in every case in the final records be on the low side, I would like to give them the benefit of the risk, but it certainly raises our eyebrows.

Dr. MORGAN. Thank you. These show that the risk of cancer from low-level exposure to ionizing radiation is far greater than was generally considered a few years ago, and that the risk estimates of the BEIR–III 1980 committee main report may be low by an order of magnitude.

Perhaps it would be a bit sobering to some of those who take a rather cavalier attitude regarding low-level exposure to ionizing radiation to note that the BEIR–III report, 1980, and the GAO report, 1981, call attention to the fact that for several types of cancer among human populations, the cancers expected per rem are greater at low doses than at high doses. I'm not saying you would get more cancers at low doses, but more cancers per rem, per unit of dose, at low doses than at high dose. They call our attention to this fact.

And to recall, as many of us did some 10 or 15 years ago, for example, some of the studies of Dr. Looney and others, and studies in Denmark, that thorium was really a serious radiation hazard. Now, up until that time we had assumed that thorium, thorium oxide or thoratrast, was no radiation problem at all because of its long radioactive half life, but it turned out that many persons were dying of hepatic tumors, that is, eradiation of the liver, these liver cancers, which resulted from this chronic exposure of this body organ.

And so even something like thorium turned out to be a radiation hazard, not just a chemical hazard, as we realize uranium is in the short range. And I'm trying to emphasize here, sir, that over the long range, the real risk may not be from the chemical risk to the kidneys, on which the present levels are based, but it may turn out for those at relatively low exposures a risk for hepatic tumors, bone tumors, and for this continuous persistent exposure, that is, exposure to the gastrointestinal tract, I would perhaps put colon cancer as the first to show the largest incidence from this work.

The average latency period of these cancers, that is, from uranium and thorium, cancers of the colon and the lung and so on, is taken as 30 years where, as explained earlier, there's quite a spread because of variation in the human response.

And I feel that reasonable precautions in order not to compromise the future of a happy life of these employees is well in order, and I hope, sir, that you can be very effective in improving working conditions at this plant.

Mr. GORE. Thank you very much. We're going to do our best.

In summary, your testimony is that, based on your analysis, in your opinion, the hazards faced by the workers at this facility were indeed serious hazards?

Dr. MORGAN. That is correct, yes, sir.

Mr. GORE. You are familiar, over a period of 50 years, with the development of the radiation exposure standards, and you would further testify that to the extent uncertainty remains about proper standards, that uncertainty should not be translated as a presumption of safety, but rather difficulty in methodology, difficulty in establishing the proper epidemiological basis for drawing conclusions, but the uncertainty should not be read as a presumption of safety?

Dr. MORGAN. I agree completely. I feel that humans should not be in this case used as guinea pigs. I feel that we have evidence, human evidence, on thorium, its chronic effects, and that we have good reason to believe that we might experience similar effects on uranium from long-range exposures to the skeleton and to the liver, and that for persistent exposure in the plant, where people are continuously eradiating at high levels urine excretion, such as this Mr. Carter, who had a 51 sum of micrograms per liter, where they have this persistent excretion, it means that it's going through the kidneys on a continuous basis, that there the risk, I would say, is very serious for cancer of the colon.

Mr. GORE. Dr. Morgan, I want to thank you for your testimony here today very much. It's been invaluable to us.

We have a vote on the floor related to the Alaskan natural gas pipeline, and we are going to have a recess for 10 minutes and then we will come back and hear from our next witness, Mr. Hancock.

Thank you very much for appearing here today.

Dr. MORGAN. Thank you.

Mr. GORE. We'll be back in 10 minutes.

[Whereupon, a brief recess was taken.]

Mr. GORE. The subcommittee will come to order, please.

Our next witness is Nolan Hancock, director of the citizenship and legislative department with the Oil, Chemical & Atomic Workers International Union.

Mr. Hancock, you are accompanied by——

Mr. HANCOCK. Yes. Mr. Chairman, I'm accompanied by John Williams, on my right, who is the district director for OCAW stationed out of Knoxville, Tenn., and on my left, Mr. Larry Able, who was the international representative who did the negotiating for the union from—anyway, he's also from Tennessee.

Mr. ABLE. Johnson City.

Mr. HANCOCK. Johnson City. And also two attorneys who are with us, Helen DeHaven and Stephen Ganter. Both of those have been——

Mr. GORE. All right. I'd like to ask all of you if—now, are your attorneys representing you as counsel, or they may be prepared to give testimony, as well?

Mr. HANCOCK. Yes, they may.

Mr. GORE. All right. If all of you, then, would stand and raise your right hands?

Do you solemnly swear the testimony you're about to give will be the truth, the whole truth, and nothing but the truth, so help you, God?

Mr. WILLIAMS. Yes.

Mr. HANCOCK. I do.

Mr. ABLE. I do.

Mr. GANTER. Yes.

Ms. DEHAVEN. Yes.

Mr. GORE. Thank you very much.

And, Mr. Hancock, without objection, the entire text of your prepared statement will be put into the record in full at this point, and we would invite you to summarize it at this time, and present as much of it as you see fit, but please proceed.

Mr. HANCOCK. Thank you, Mr. Chairman.

[The prepared statement of Nolan Hancock follows:]

STATEMENT OF THE
OIL, CHEMICAL AND ATOMIC WORKERS
INTERNATIONAL UNION
Robert F. Goss, President

before the

SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT

of the

HOUSE COMMITTEE ON SCIENCE AND TECHNOLOGY

on

Employee Health and Safety at TNS, INC.
(Formerly Tennessee Nuclear Specialties, Inc.)

December 8, 1981

My name is Nolan W. Hancock, Citizenship-Legislative Director of the Oil, Chemical and Atomic Workers International Union. I am accompanied by John Williams, OCAW District Director, Knoxville, Tennessee, and Larry Abel, OCAW International Representative, Johnson City, Tennessee. OCAW President Robert F. Goss would have presented the Union's testimony at this important hearing but for a previous commitment.

Mr. Chairman, I want to thank you for holding this hearing and providing OCAW and others this opportunity to present our views on the issue of nuclear employee health and safety, particularly at TNS, Inc., Jonesboro, Tennessee. The OCAW represents some twenty locals totaling approximately 10,000 workers in the nuclear industry, located in twelve states. Therefore, our Union has a vital interest in nuclear research and development and the mass nuclear industry and continues to provide strong support for this industry.

It suffices to say that our workers encounter the full range of the occupational health and safety problems in the nuclear industry, and as in all industries where the OCAW represents workers, we take strong positions to support the right of workers to a safe and healthy workplace. Where the nuclear industry is concerned, our concern is two-fold: first and foremost is the protection of our members; secondly, because of the public concern over the safety of the industry, we understand that a good safety record is essential for the industry's survival and growth.

We believe job safety and health is a right, not a benefit. Our members believe they have a right to a work life without the fear of sudden or early death or destroyed health. At one time the majority of the Congress shared our belief in the right to occupational health and safety and passed federal legislation in the form of OSHA and MSHA to enforce that right. Our union and others, however, have never relied entirely on legislative protections and also seek to guarantee our members a healthy workplace through the collective bargaining process. A common saying among our membership is that "if its not in the contract, we don't have it." Not since the creation of OSHA has that been more true than now. Recent shifts in public opinion regarding OSHA leave the contract as the only certain means of protecting our members.

The insistence of our Local 3-974 of Jonesboro, Tennessee on contractual health and safety protection and a continuing work stoppage resulting from that insistence is the reason we are here today. The fact that the hazardous substance involved is the highly toxic, and federally controlled uranium and that the employer is under federal contract makes this situation a matter of some concern to this Committee. We are here at your request to discuss the health hazards that currently exist and led to the work stoppage, the failure of existing safety laws and their enforcement to remedy the situation, and the events leading to a safety related work stoppage now in its eighth month.

The Oil, Chemical and Atomic Workers International Union and its Local 3-974 represent approximately 105 employees at TNS, Inc. We were certified as the bargaining agent for the production and maintenance employees of TNS early in 1978. An initial three-year contract was negotiated between TNS and OCAW, effective May 1, 1978, and expiring on April 30, 1981.

TNS, Inc., formerly Tennessee Nuclear Specialties, Inc., located in Jonesboro, Tennessee, is a subsidiary of Aerojet General Corporation. The parent company of both TNS, Inc. and Aerojet is General Tire Corporation.

Produced at TNS are 30mm depleted uranium rounds (armor-piercing ammunition) referred to as penetrators. The rounds are produced for the U. S. Air Force's Wright-Patterson Air Force Base, Ohio. (Contract Number - F33657-79-C-0405, listed under Aerojet Ordnance Company, Downey, California.) The contract awards amount to over $175 million.

Under Contract No. F33657-79-C-0405 between the United States Air Force and Aerojet Ordnance Company, Section L - General Provisions states:

> "Part I. The provisions of the contract clauses set forth in the following paragraphs of the Defense Acquisition Regulation (DAR) (ASPR) Jul 1976 Edition are incorporated into this contract by reference with the same force and effect as though herein set forth in full:"
>
> One such provision listed is Clause Number 16, DAR/ASPR Reference No. 7-103.17, the Walsh-Healey Public Contracts Act, which states:

> "If this contract is for the manufacture or furnishing of materials, supplies, articles, or equipment in an amount which exceeds or may exceed $10,000 and is otherwise subject to the Walsh-Healey Public Contracts Act, as amended (41 U.S.C. 35-45), there are hereby incorporated by reference all representations and stipulations required by said Act and regulations issued thereunder by the Secretary of Labor, such representations and stipulations being subject to all applicable rulings and interpretations of the Secretary of Labor which are now or may hereafter be in effect."

(End of clause)

Section 35 (e) of the Walsh-Healey Public Contracts Act outlines the responsibility that TNS has under the terms of their contract with the Air Force to provide for employee working conditions that are safe, sanitary and a healthy workplace.

Section 35(e) of the Walsh-Healey Public Contracts Act states:

> "(e) That no part of such contract will be performed nor will any of the materials, supplies, articles, or equipment to be manufactured or furnished under said contract be manufactured or fabricated in any plants, factories, buildings, or surroundings or under working conditions which are unsanitary or hazardous or dangerous to the health and safety of employees engaged in the performance of said contract. Compliance with the safety, sanitary, and factory inspection laws of the State in which the work or part thereof is to be performed shall be prima-facie evidence of compliance with this subsection. (June 30, 1936, ch. 881, 1, 49 Stat. 2036; May 13, 1942, ch. 306, 56 Stat. 277.)"

Contrary to the above requirements, and arising out of the manufacture of these depleted uranium rounds at TNS, is the issue of OCAW workers' health and safety, and the interest of this Committee.

MANUFACTURING PROCESS

The processing of projectiles begins with the basic raw material called green salt or uranium tetrafloride UF4, a highly toxic substance. This material is blended and packed into reduction furnaces in large pots to be melted, then cooled, leaving a solid mass of uranium metal called a derby. The derby, which weighs several hundred pounds, is put into a vacuum furnace, remelted and poured into graphite molds called billets. The billets are then shipped off to another location for additional work. The billets are returned to TNS in the form of long rods which go through several processes of heating, cutting, grinding and forging. They are then reheated, straightened and formed into penetrators.

The manufacturing process of the projectiles produces uranium contaminated dust, radiation exposure, smoke and excess noise levels. These conditions cause serious health hazards at TNS.

JOINT HEALTH AND SAFETY COMMITTEE

A joint company-union safety committee, consisting of two (2) members of management and two (2) employee members of the Union, was established by contract to address these hazards. Beginning on July 2, 1980, monthly plant safety tours were conducted by this committee. After each tour a safety inspection report was prepared noting the safety and health problems discovered during the inspections and suggesting corrective actions. These tours continued for ten months but rarely produced satisfactory abatement of identified hazards. In fact, by the end of the ten-month program our Local Union President pointed out to management that hazards identified by the committee in the first month's inspection continued to exist. (Copies of the safety reports have been made available to this Committee.)

The most serious concern to our members was the danger of frequent and heavy exposure to radiation, particularly the inhalation of uranium dust. Instead of abating the problems through engineering controls, corrective maintenance and proper cleanup of the radiation hazards to reduce the radiation exposure, the Company chose to initiate a respirator policy for the employees. Rather than eliminate the hazard, TNS decided to alter the worker.

RESPIRATOR PROGRAM

In January 1981, the Company instituted a mandatory respirator program for workers in the grinder area in the penetrator shop (about 20 workers), small derby shop (about 7 employees) and on the incinerator and clean line (4 workers). These workers were told to wear cartridge respirators for the full eight-hour day. The Company also instituted a beard policy requiring each employee to be clean shaven as a means of insuring a proper fit. However, no pulmonary lung testing was done to determine individual ability to breathe through respirators. Wearing a respirator for less than eight hours is exhausting even for someone with the healthiest of lungs, and can be hazardous for those with less lung capacity.

A number of employees brought in notes from their physicians informing the Company they were unable to wear respirators for a full shift due to medical conditions. The Company informed these individuals that if they could not wear respirators as required, there would be no work for them until they were able to do so. In at least three cases workers were suspended by the Company because they could not wear a respirator for medical reasons.

Respirators at TNS were cleaned by dipping them into a bucket of water located near the furnace in a contaminated area. According to employees, the water in the bucket was not changed daily and there was about one-half inch of slime in the bottom. Also, according to employees the respirators were neither properly smeared to check for contamination nor monitored for radiation before each use. Supervisors were responsible for cleaning respirators and changing respirator filters. The filters were changed only every few weeks.

The respirator program required by the Company was far from adequate. Typically an industrial respirator program includes:

1) employee pulmonary lung testing prior to putting any employee in a respirator;
2) proper fitting of the respirator;
3) employee training on how to test a respirator for proper seal; and
4) proper cleaning and changing of respirator filters.

In the nuclear industry commonly accepted respirator policies involve rotating employees on jobs requiring respirator use. Respirators are used only for short durations when working in a radiation contaminated area (such as cleaning or dismantling equipment). It is also a generally accepted practice that respirators are washed, smeared and monitored for contamination and radiation after use and new cartridge filters installed before each use. Employees are fitted to make sure the respirators are properly sealed.

TNS, in our opinion, not only has disregarded commonly accepted industry safety practices, but is in violation of federal OSHA and

NRC regulations by requiring employees to wear respirators during routine work. (It should be noted that Tennessee occupational health and safety inspectors have been of little assistance in correcting this unhealthy situation and that Tennessee has a state OSHA program.)

RESPIRATOR EFFECTIVENESS

OSHA policy in past administrations has been to prefer engineering controls over personal protective equipment in job hazard situations, primarily because the former is generally more effective than the latter. The choice for the worker is to have the source of a hazard eliminated or be put into a bag. In the case of TNS the bag leaked as the following data will indicate.

According to NRC regulatory guidelines, 8.22 uranium in the urine may indicate the possibility of kidney damage (depending upon the concentration). Specifically, according to the Guide, four consecutive samples (2 weeks apart) of 30 ug of uranium per liter of urine (ug-microgram) or higher, or one reading of 130 ug/L or higher present the possibility of kidney damage, as noted in Dr. Mark Nelson's safety report of July 25, 1981. Dr. Mark Nelson has worked with the OCAW Health and Safety Department.

After reviewing the records provided by TNS, Dr. Nelson found the following:

1) Fifty-three of 100 current employees had exceeded the NRC guidelines in 8.22 by having at least one of the following present (according to the company records).

(A) At least four consecutive urine uranium levels of 30 ug/L or greater.
and/or
(B) At least one urine uranium level of 130 ug/L.

2) Of 19 workers wearing respirators during January through April 1981, eight workers had average uranium urine concentrations as follows:

Employee	average uranium urine concentration for Jan.-April 1981, in ug/L
Carter	51.25
Chambers, Mike	36.7
Casey, Hyder	43.2
Devoti	31
Freeman	35
Lenoir	42
Richardson	46
Whitaker	42

Dr. Nelson concluded, "Obviously, the respirators aren't doing the job. Furthermore, there are many other workers (who apparently were not mandated by the Company to wear respirators) who showed high urine uranium concentrations in 1981."

Dr. Nelson listed 15 additional employees whose average uranium urine concentrations for January-April 1981 exceeded 30 ug/L.

In his June 9, 1981 report Dr. Nelson states: "The Company mandatory respirator policy is indirect evidence of hazardous overexposures and poses a severe threat to employee job security as well. The current contract allows the Company to discharge employees who they regard as medically unfit for work. Already, employees unable to wear respirators have been suspended."

In the same report Dr. Nelson also states: "A Union proposal on safety and health was presented by International Representative Steve Wodka and the Local to the Company in early June 1981. The purpose of the proposal is to bring in an independent industrial hygiene team to monitor workplace exposures in order to identify overexposures, develop adquate engineering controls to control those exposures, and terminate the mandatory respirator program by December 1981."

The mandatory respirator program was an inadequate means to control employee internal uranium exposure because: it was improperly administered; did not provide real protection for the workers; and was not a long- or short-term solution to the health and safety problems at TNS.

NEGOTIATIONS

It is clear from the above that overexposure to radiation and inadequate protective measures became a prime issue in contract negotiations. At stake were the interrelated concerns of workers long term health and safety and the more immediate concern over their livelihoods. I submit, Mr. Chairman, that the choice between one's health and bread is no choice at all.

The mandatory and inadequate respirator policy was a major issue during the contract negotiations which have resulted in the current work stoppage. The Union has maintained that the work areas involved need to be cleaned up by adequate engineering and maintenance to properly protect employees from contaminated dust. While respirators may be effective in certain circumstances, TNS's policy is both unreasonable and inadequate.

Throughout negotiations the company refused to clean up the work area and put in proper ventilation equipment. Hoods and duct work over the machinery could have reduced or eliminated the airborne radioactive dust and contamination. This could have eliminated or reduced reliance on the ineffective TNS respirator program. (TNS has been cited by Tennessee OSHA on this issue.)

The Union maintained throughout negotiations that the over reliance on the respirator program was indeed proof that TNS was not a safe place to work as the Company has maintained.

NEGOTIATIONS PREPARATION

During December, 1980, OCAW International Representative Larry Abel met with the TNS Local Union Bargaining Committee to discuss new contract proposals.

Mr. John Bettis, President of the Local Union and chairman of the Local's Safety and Bargaining Committees, was present during these discussions. At that time he voiced his concerns that:

1) employees in certain areas having high radioactive urine counts;
2) a great number of employees were being rotated out of "hot" radioactive contaminated areas into other areas;
3) many employees were being laid off after they worked in the "hot" areas;
4) as many as 15 to 20 employees were being overexposed to radiation contamination; and
5) the employees' locker room was contaminated and there was only a strip of tape on the locker room floor dividing the contaminated and cold areas.

Shortly after the discussions, Mr. Abel informed Mr. Ron Sparks, TNS Industrial Relations manager, that the Local Union was concerned about the above problems and that the Local's contract proposals would include health and safety measures. Mr. Sparks responded to Mr. Abel by indicating that they were aware that they had problems and that they were working on them.

On March 11, 1981, Mr. Bettis stated to Company officials that "the employees will not return to work after April 30th until the items which are on the Health and Safety Inspection Report have been corrected and TNS is safe and healthy for the employees to work. This includes the items from past inspections as well as the items which will be listed during the April inspections." Mr. Bettis also expressed grave concern over the unhealthy conditions in the men's locker room.

Negotiations for contract renewal began on March 24, 1981, and continued on March 25, April 8, 9, 24, 25, 27, 28, and 29.

A total of three meetings were also held after the May 1st work stoppage, on June 3, July 16, and September 3, 1981.

MAJOR NEGOTIATION ISSUES

The major issues causing the impasse during the negotiations were:

1)Company proposal #1312 to provide for a ten (10) day layoff without regard to seniority. The Company said the only reason they wanted this was for "business" reasons.

Our members understood that the Company could use this provision to temporarily lay off workers overexposed to radiation without suffering the associated costs such as workers compensation payment, higher insurance rates, a poor safety record, and, ultimately, the loss of the contract. The Union requested the Company to modify their proposal to state that the lay off would only be used for production purposes and that it would not be used to temporarily lay off an employee who had become overexposed or had a high urine count. But the Company would not agree to any modifications. Therefore, the Union concluded that the Company only wanted to use this proposed contract clause to temporarily lay off overexposed workers, obviously a health and safety issue as opposed to production dispute.

2) The Company proposed to increase the employee probation period from 90 calendar days to 180 working days.

The Union believes the Company would use the increased probation period to bring in temporary employees for the extremely hot radiation jobs for an extended period of time, and then, after overexposing these workers, the Company could lay them off and bring in a new group of temporary workers. This would allow the Company to rotate employees in and out of the plant for radiation exposure purposes. The Company finally agreed to modify this proposal to 90 working days, still a long period in such a hazardous job. Therefore this issue in our members minds is a health and safety issue.

3) The Union proposed to modify a contract article on lay offs which gave the Company the right to put employees on inactive payroll because of medical reasons rather than transfer them to "safe" jobs. Within two weeks of the contract termination, the Company used this clause to put on inactive pay two employees who were unable to wear respirators eight hours a day because of medical reasons. The Union proposed that this contract clause not include overexposed workers or those with high urine counts or high body count but the Company would not even discuss this health and safety issue.

4) The Union's Proposal #20 on health and safety language was also a major issue.

The Union did not agree with either the Company or the state that the TNS plant was safe. The Union questioned whether either the Company's or state's health and safety personnel were qualified.

We wanted to bring in outside professionals to do a plant health and safety evaluation but the Company refused to negotiate on the Union's proposal. Tennessee law allows either party to bring in outside experts upon approval of the other party but the Company, in this case, objected.

The only Company movement on health and safety during the entire negotiations followed the work stoppage. The Company offered to agree to:

1) keep an overexposed worker on the payroll for up to 6 months, but in a different job. After 6 months, the Company would have the right to lay off the employee permanently;
2) if a worker became overexposed the Company would maintain his rate of pay for up to five days. After that the Company could transfer the employee to a lower paying job.

Neither of these provisions, Mr. Chairman, offer much incentive for a sound safety program and our members at the plant recognized this.

5) Lastly, as detailed here, the Company Respirator Program is also a major unresolved issue during these negotiations and has been discussed at length in this testimony.

NEGOTIATING SESSIONS: DISCUSSIONS AND ISSUES

On May 1, 1981 a work stoppage occurred at TNS. OCAW maintains, and through this testimony will prove to the Committee's satisfaction, that the management at TNS, in fact, fostered the work stoppage by refusing to address seriously and in good faith the health and safety concerns expressed by the workers at TNS. The Company chose instead to continuously cloud and evade the health and safety issues by injecting their economic proposals.

At the opening session of negotiations on March 24, 1981 the Company broke with the traditional negotiation format by interrupting the opening statement by the moving party (in this case OCAW International Representative Larry G. Abel), by proposing economic changes in the contract. TNS expressed a concern that their employees were "behind in wages and benefits". TNS was well aware that health and safety protection was a fundamental part of Local 3-974's contract demands and perhaps thought that a voluntary offer to increase wages would soften the local's commitment to those goals.

After consultations, OCAW representative and Union spokesman Larry G. Abel refused the Company's proposal to discuss economic issues on the basis the Union was the moving party, thus maintaining presentation priority.

This drew an initial Company refusal indicating the Company's desire to quietly establish the negotiation atmosphere as strictly economic. OCAW's insistence on presentation priority forced the Company to yield to a discussion and presentation of the Union's proposals. Included in those proposals was a proposal on health and safety. Rep. Abel gave special mention of severe health and safety problems, ie. high urine counts and mandatory use of respirators by employees during the 8-hour shifts. These discussions brought no questions or response from Company negotiators,who had,prior to the presentation of these proposals, stated they would ask questions if they desired further explanations.

After the Union yielded to the Company negotiators, Corporate Manager Kriska began his presentation with the statement "We (the Company) realize this plant is behind in wages and benefits and wanted to implement new wages and benefits on April 1, 1981." Again the Company reverted to the discussion of economic issues prior to solving non-economic issues while virtually ignoring OCAW's non-economic proposals. During the evening session the Company's economic proposals were once again rejected by OCAW District Director John Williams as an attempt to "cram the wage proposals down our throats when we have all these safety problems in the plant."

It was then that Mr. Kriska expressed the sentiment that "the main problems were wages" and he didn't feel they had the safety problems we complained about.

As comments in that vein continued,OCAW Rep. Abel noted that Mrs. Craig, Company stenographer, was deliberately stopping her writing anytime the Union discussed safety, omitting any discussion of health and safety from her notes.

The negotiations proceeded on March 25, 1981 with OCAW holding firm to the principle that before any agreement could be reached, the Company would have to give serious consideration to the OCAW health and safety proposals. Plant Manager, George Christensen, admitted that the Company had problems and wanted the Union to give his new management team a chance to straighten out the problsms. Rep.Abel replied that the employees had reached the limit of their patience in regards to the continuous policy of wearing respirators for 8 hours a day, and other health and safety problems had gotten out of hand.

Negotiations reached a deadlock during the April 8, 1981 session over a TNS proposal that the Company be granted the right to layoff for a 10-day period, without regard to seniority, any employee for so-called "business reasons". This proposal opened the possibility that would allow the Company "to lay off" employees defined as "hot" due to radiation overexposure. The Union could not agree to this proposal because of high urine counts and radiation overexposure. The Union asked the Company to modify their proposal and agree not to use the clause to lay off workers who were overexposed. The Company would not agree to that amendment. The Company's refusal suggests the real intent of their proposal was to lay off overexposed workers. Then each Union Committee member complained of plant health and safety problems. Mr. Christensen again asked for time "to correct the problems", once again contradicting TNS Corporate Manager Kriska's denial that such problems existed. Mr. Kriska was then presented with a list of employee names by OCAW Local President J.E. Bettis, who had problems in the plant on health and safety. The Company agreed to check the problems out the next morning.

The April 9th session proceeded with Mr. Christensen saying "they would let the Union know later" as to the results of their findings. Rep. Abel once again emphasized that the Company and the Union were miles apart on the Company's 10-day layoff proposal and the Union's health and safety proposals because the Company still did not want to recognize or do anything about the existing health and safety problems.

At the beginning of the April 24th session contradictions arose in the Company's bargaining premise that safety problems were non-existent. The Company maintained there were no health and safety violations. Despite this facade of safety, they had initiated a mandate that employees wear respirators during their eight-hour work shift. Those who couldn't wear respirators and/or had a high urine count were laid off. It was apparent to the Union the plant was not up to safety standards or why would the Company have installed the respirator program? At this meeting Mr. Abel told the company he was upset "that more people had been fired and laid off because of the respirator and other problems." Both sides agreed to discuss non-economic issues and some were agreed upon, others were not. To further demonstrate their intentions, Mr. Christensen , on behalf of the Company, totally rejected OCAW's health and safety contract language proposals because they felt they didn't have many problems.

Mr. Abel asked Mr. Christensen how he could make that statement when employees were having high urine counts and being required to wear respirators. Mr. Christensen replied "I'm still asking for more time." Mr. Abel then requested the Company to allow OCAW professional health and safety people to conduct a plant survey. Mr. Kriska (for the Company) refused the Union's request. Director Williams, attending the afternoon session, said there were too many problems in the plant and emphasized that negotiations were not moving. He critisized the Company for running people out the door everyday and questioned the credibility of the management side. As negotiation issues were discussed Williams told the Company that OCAW was firm on the contract's health and safety language. George Christensen replied that the Company was staying within State limits, and didn't feel they were having so many problems. Williams disagreed that the Company was within State limits, or that the State required the people to wear respirators when NRC and DOE won't allow them to wear respirators for an eight-hour day. Mr. Kriska then asked if it would be acceptable for them to bring in their health and safety person at the next meeting and the Union agreed.

The April 25th meeting was devoted to discussions of the health and safety issues in the plant. In attendance with Company negotiators was their health and safety person, Jim Barlow. Director Williams asked Mr. Barlow what was being done to stop the contamination which required the employees to wear respirators. Mr. Barlow replied that in the grinding areas containers had been put over the machines and they had air samplers to check the contamination level. Larry Abel asked if daily checks were made on these air samplers, as was the practice in other nuclear plants. Mr. Barlow replied "no". He said they checked the air samplers periodically. Williams asked if there were any improvements in exposures since the Company had forced the employees into wearing respirators. In Mr. Barlow's reply he stated they had been evaluating the workers for the past two months. He also said since employees had been wearing the respirators eight hours a day, they were not having as high a urine count. Director Williams replied that "the employees continue to be exposed while the Company continues to evaluate them". He said "the Union believes the Company was overexposing the employees and we feel the TNS plant is unsafe and we don't feel you care". Williams said "if you don't agree to clean it up, we won't work past the 30th of April."

Director Williams then asked the Company what events led up to forcing the employees to wear respirators eight hours a day. The Company replied that employees were being exposed at a rate of 100 prior to being forced to wear the respirators and indicated that after they initiated the respirator program, the employees' urine sample analysis were reduced to about 40. The Company indicated that forcing the employees to wear respirators was for their own health and safety. The Union's position at this point, as indicated by Director Williams, was that it was ridiculous for a health and safety person or anyone who was supposed to know anything about radiation to force people to wear respirators eight hours a day and then claim that the plant was safe.

The Union and Company further discussed how they could reduce the number of workers wearing respirators in the plant. Plant manager Christensen admitted that when he went back to California, he had the same kind of problems in the grinding area and if the Union thought it would decrease the number of people wearing respirators in the plant, he would agree to enclose the grinding area. Director Williams said he thought it might help and that all of the Union's safety concerns needed attention.

Local Union Vice President Carson brought to the Company's attention they had Company assurance that employees would be able to cease continuously wearing respirators. Instead employees unable to wear respirators were being sent home including Mr. Carson. He also noted that fifteen health and safety grievances had been filed, representing only a small proportion of the health and safety complaints. He questioned the safety of the locker rooms where only a piece of tape on the floor separated the contaminated and non-contaminated sides.

Mr. Christensen stated that long before Bettis' report was received, the Company realized that they had a problem in the locker room and stated they had a long-range plan to build new locker facilities. In the meantime, a petition would be built to separate safe and contaminated areas. The Company also stated it was moving as fast as possible, but, Mr. Chairman, this was already one year after the issue had been raised. The total discussion during this negotiating session centered on the subject of health and safety.

During the April 27th negotiations, Federal Mediator Ed Seddlmeier heard each parties position in private. The Union, in an attempt to get the negotiations moving, made several changes in its proposals while the Company gave very little or nothing.

At a conference involving both parties, Director Williams suggested the Company's lack of movement indicated that it had no intentions of settling the contract. He stated that without resolutions of the safety issues there would be no agreement.

The Company rejected Director Williams' suggestion that OCAW bring in either its own health and safety people or NIOSH to evaluate the problems.

At the April 28th negotiation meeting the Company arrived over one hour late, as with nearly every previous session, prompting a scolding from Mediator Seddlmeier. At this session the Company stated it still had no word on our NIOSH proposal. After discussing several other proposals Director Williams asked for the Company's final proposals. He told Company representatives that he thought they were playing games, not only with health and safety proposals but with other issues as well.

On April 29th, upon receipt of the Company's final offer, Representative Abel stated very clearly that the failure to address the plant's numerous health and safety problems, and this issue alone, would cause a work stoppage.

At this point, Mr. Chairman, I would like to point out what we believe to be an effort by the Company to downplay the importance of safety in negotiations and the operation of the TNS facility. During the April 29th meeting Representative Abel complained that the Company representative taking notes of the negotiating sessions did not record exchanges between the parties on matters of safety. Additionally, the Company's safety personnel had not maintained accurate records of the joint safety inspections, requiring the Local to submit addendums to many safety reports in order to insure an accurate record.

The April 29th meeting ended with the OCAW again stressing disappointment in the Company's apparent determination to force a job action over safety issues, the economic proposals being acceptable. We told the Company that our members would not continue to unnecessarily overexpose themselves and that in the very likely event of a work stoppage, it would be orderly.

On April 30th our Local unanimously rejected the Company's final offer. TNS had begun the closedown in advance of the rank and file vote, knowing full well that our members regarded their health and safety as non-negotiable. In fact, the Company had started barricading the plant several weeks prior to the contract expiration date. After spending nearly 85% of the negotiating sessions on safety issues and running into a stone wall, we can only conclude that the Company is unable or unwilling to operate the facility safely or wanted to provoke a strike. With regard to the former, Mr. Chairman, I might add that at no time during the talks did we ask for the impossible. We are responsible negotiators and realize that everything cannot be accomplished overnight. But we could not even get a sense from management that they considered health and safety to be a valid subject for bargaining.

Following the work stoppage on June 3, we brought in an International Safety Representative, Steve Wodka, to try to find a way out of the impasse. One issue discussed was the requirement of the constant wearing of respirators in 117 degree heat. Based on Company promises to alter the policy, we requested a termination date and assured the Company that NRC regulations did not require such procedures. The Company refused to commit itself to a timetable. We additionally suggested the use of a counsulting firm (CLU Industries) to find engineering controls as alternatives to wearing respirators eight hours per day.

The Company balked at the suggested firm, said that the Union would be required to pay one-half the costs of any firm used, and reserved the right to reject any recommendations resulting from any independent evaluation. Finally, the Company rejected the Union's proposal. The Union complained at this meeting of public statements by the Company that economics were the cause of the work stoppage.

On July 16th another meeting was held, this time including Federal Mediator Lonnie Stokes. Through the Mediator we again confirmed the primacy of health and safety issues and our displeasure with Company comments to the contrary. We offered to move a bit on the layoff policy as long as it wasn't used to lay off those with high urine counts, but the Company said no. Their negotiators did agree, however, to protect overexposed workers with rate retention for up to six months as indicated by chest and full body counts, but not by urine counts because the state had no guidelines or urine counts. In response to Company claims that the facility was safe , we asked that our safety professionals be allowed into the plant. To this Company spokesman Mojer said, John Williams, if you owned your own business, you would do your own thing and we intend to do likewise. We have brought in consultants from the State and they all back what Hoynacki says."

Mr. Chairman, when the state inspectors visited the plant it wasn't even running. If the plant was safe, as the Company maintained, why object to non-management verifications?

The last negotiating session involved Federal Mediator Ed Seddlmeier and OCAW Vice President Joe Misbrener as well as the regulars. We talked through the Mediator, never meeting face to face. Through Mr. Seddlmeier we learned that our members had been permanently replaced, that the penetrator shop had been moved to California and that fifty-three scabs had been hired locally, according to the Company, filling local needs. None of our experienced workers were needed.

CONCLUSION

Mr. Chairman, OCAW believes the government and Congress have a special responsibility to workers in the nuclear industry. These workers should not be forced into a work stoppage to protect their health and their lives. The choice between one's health and a paycheck is no choice at all. Safety in nuclear plants is not a new issue with OCAW. We have fought for improved safety for our members in the nuclear industry for almost 35 years. But this is the first time we have not been able to resolve the issue through the arbitration and negotiation procedure. This is the first work stoppage over only health and safety issues in a nuclear plant in our union's history.

Nuclear workers not only face the usual health hazards found common in industry, they also face the eminent danger of internal and external radiation. In order to avoid major conflicts and strikes over health and safety issues in the nuclear industry, OCAW has recommended that special committees be set up in the Departments of Labor and Energy to investigate and remedy unsafe working conditions in plants where nuclear materials are used and the dangers of radiation are present.

Mr. Chairman, I worked for over 20 years in a nuclear plant as an instrument mechanic. One of my jobs was the maintenance and calibration of radiation health and safety instruments. In each work area there were instruments to monitor radiation levels and air contamination levels with audible alarms to warn employees to evacuate if the radiation level or air contamination level exceeded limits. Work areas that became contaminated were immediately cleaned up. Locker rooms were especially kept clean and each employee walked through a radiation monitoring system prior to leaving the plant. Before any job in a radiation area was performed, the work area was monitored for radiation and contamination.

levels. Because of these precautions and the union members' constant policing of health and safety practices and standards, I felt safe working in a nuclear plant.

At the TNS plant these precautions are apparently not taken. Their air sampling equipment does not have alarms and are shut off during a work shift if the filter runs out. Employees are not monitored for radiation when they leave the plant, leaving them unaware if they are taking radiation contamination home to their families.

We believe the health and safety exposures and working conditions at TNS are serious and anything but typical of a nuclear plant.

Mr. Chairman, we have been off the job over health and safety issues for nearly eight months now, with no end in sight. The situation that now exists in Jonesboro is solely related to TNS' refusal to take health and safety as a serious management responsibility. TNS apparently has not realized that the time when employers could operate in total disregard for employee health and safety has long passed. Perhaps TNS' management believes that this Administration's apparent concern for the economic costs of protecting workers, as emphasized by the desire to place a value on the life of the worker through cost benefit analysis, gives the Company a green light on health and safety matters. We still haven't come to a good market value for one's health and safety and I doubt that we ever will.

As I mentioned earlier, we have something to gain from the safe development of the nuclear industry in the United States. We would like to see it grow since we have the upper hand in organizing its workers, but we know it will not grow unless the public perceives it as safe. How can the public have confidence in an industry that forces its employees off the job over safety? Would you want such a facility located any where near you?

If there is anything we, the OCAW, have to gain from these hearings, it would be a commitment from the federal government to enforce the safety laws that it saw fit to write. In our opinion, we are dealing with an outlaw company that is using national security and confidence in a toothless OSHA to blatantly violate the law. I am confident we will win this battle eventually. I just hope the casualties don't take the joy out of victory.

Our staff is here to answer any questions you or other members of the Committee might have.

STATEMENT OF NOLAN HANCOCK, DIRECTOR, CITIZENSHIP AND LEGISLATIVE DEPARTMENT, OIL, CHEMICAL & ATOMIC WORKERS INTERNATIONAL UNION

Mr. HANCOCK. I want to thank you for holding this hearing and providing OCAW and others the opportunity to present our views on this issue of nuclear health and safety, particularly at TNS, Jonesboro, Tenn.

The insistence of our Local No. 3-974 of Jonesboro, Tenn., on contractual health and safety protection and a continuing work stoppage resulting from that insistence, is the reason that we're here today, Mr. Chairman. The fact that hazardous substances involved the highly toxic and federally controlled uranium and that the employer is under Federal contract makes this situation a matter of some concern also to this committee. We are here at your request to discuss the health hazards that currently exist and led to the work stoppage. The failure of existing safety laws and their enforcement to remedy the situation and the events led up to a safety related work stoppage which is now in its eighth month.

The Oil, Chemical and Atomic Workers International represent approximately 105 employees at TNS, and we were certified as the bargaining agent early in 1978, and at that time were successful in negotiating a 3-year contract with TNS.

The manufacturing process of projectiles produces uranium-contaminated dust, radiation exposure, smoke and excess noise levels, but the most serious concern to our members is the danger of frequent and heavy exposure to radiation, particularly the inhalation of uranium dust.

Instead of abating the problem through engineering controls, corrective maintenance and proper cleanup of the radiation hazard to reduce the radiation exposure, the company chose instead to initiate a respirator policy for the employees. Rather than eliminate the hazard, TNS decided to alter the worker.

In January 1981, the company instituted a mandatory respirator program for workers in the grinder area in the penetrator shop, small derby shop, and on the incinerator and clean line. These workers were told to wear cartridge respirators for the full 8-hour day. However, no pulmonary lung testing was done to determine the individuals' ability to breathe through the respirators, and wearing a respirator for less than 8 hours is exhausting even for someone with the healthiest lungs and can be hazardous for those with less capacity. I can attest to that, Mr. Chairman, because I worked for 23 years in a nuclear plant, and I had some experience wearing some respirators.

However, a number of employees brought in notes from their physicians informing the company they were unable to wear respirators for a full shift due to medical conditions. The company informed these individuals that if they could not wear the respirators as required, there would be no work for them until they were able to do so. In at least three cases, workers were suspended by the company because they could not wear a respirator for medical reasons.

It's already been testified that respirators at TNS were cleaned by dipping them into a bucket of water located near the furnace in a contaminated area, and the supervisors were responsible for cleaning the respirators and changing the filters, although the filters were changed only every few weeks.

The respirator program as required by the company was far from adequate. Typically, an industrial respirator program includes: An employee pulmonary lung testing prior to putting any employee in a respirator; the proper fitting of a respirator; the employee training on how to test a respirator with a proper seal; and, the proper cleaning and changing of respirator filters.

In the nuclear industry, commonly accepted respirator policies involve rotating employees on jobs requiring respirator use. This is short jobs, and if the job is going to be over a half-hour or an hour, they will rotate the individuals. It is also a generally accepted practice that respirators are washed, they're smeared and monitored for contamination and radiation after each use and a new cartridge filter installed. Employees are fitted to make sure the respirators are properly sealed.

TNS, in our opinion, not only has disregarded commonly accepted industrial safety practices, but is, we believe, in violation of the Federal OSHA and NRC regulations by requiring employees to wear respirators to do routine work. It should be noted that Tennessee occupational health and safety inspectors have been of little assistance in correcting this unhealthy situation.

OSHA policy in past administrations has been to prefer engineering controls over personal protective equipment in job hazard situations, particularly because the former is generally more effective than the latter. The choice for the worker is to have the source of a hazard eliminated or be put in a bag. In this case, the TNS bag leaked, as noted in Dr. Mark Nelson's safety report as of July 25.

After studying the employees' exposure record, and Dr. Nelson has testified, Dr. Nelson concluded that, "Obviously, the respirators aren't doing the job. Furthermore, there are many other workers who showed high urine concentrations also in 1981."

The mandatory respirator program was an inadequate means to control employee internal uranium exposure, because it was improperly administered, did not provide real protection for the workers, and was not a long- or a short-term solution to the health and safety problems at TNS.

It is clear that overexposure to radiation and inadequate protective measures was a prime issue in the contract negotiations. At stake were the interrelated concerns of workers' long-term health and safety and the more immediate concerns over their livelihoods. I submit, Mr. Chairman, that the choice between one's health and bread is no choice at all.

The mandatory and inadequate respirator policy was a major issue during the contract negotiations which have resulted in the current work stoppage. The union has maintained that the work areas involved needed to be cleaned up with adequate engineering and maintenance to properly protect the employees from the contaminated dust. While respirators may be effective in certain circumstances, TNS's policy is both unreasonable and inadequate.

Throughout the negotiations the company refused to clean up the work area and put in proper ventilating equipment. Hoods and duct work over the machinery could have reduced or eliminated the airborne radioactive dust and contamination. This could have eliminated or reduced the reliance on the ineffective TNS respirator program. And TNS has been cited by Tennessee OSHA on this issue.

The union maintained throughout negotiations that the over-reliance on the respirator program was indeed proof that TNS was not a safe place to work, as the company has maintained.

The major issues causing the impact during negotiations were—and there are five major issues, Mr. Chairman.

Company proposal 1312 to provide for a 10-day layoff without regard to seniority. The company said the only reason they wanted this was for business reasons. Our members understood that the company could use this provision to temporarily layoff workers overexposed to radiation without suffering the associated costs, such as workers compensation, higher insurance rates, a poor safety record, and ultimately the loss of the contract. The union requested the company to modify their proposal to state that the layoff would only be used for production purposes and it would not be used for a temporary layoff of an employee who had become overexposed or had a high urine count, but the company would not agree to any modifications. Therefore, the union concluded that the company only wanted to use this proposal to temporarily layoff overexposed workers, obviously a health and safety issue, as opposed to a production dispute.

Two, the company proposed to increase the employee probation period from 90 calendar days to 180 working days. The union believes the company would use the increased probation period to bring in temporary employees for the extremely hot radiation jobs for an extended period of time, and then after overexposing these workers, the company could lay them off and bring in a new group of temporary workers. This would allow the company to rotate the employees in and out of the plant for radiation purposes. The company finally agreed to modify this proposal to 90 working days, still a long period for such a hazardous job; therefore, this issue in our members' minds is a health and safety issue.

The union proposed to modify a contract article on layoffs which gave the company the right to put employees on inactive payroll because of medical reasons, rather than transfer them to safe jobs.

Within 2 weeks prior to the contract termination, the company used this clause to put on inactive pay two employees who were unable to wear the respirators 8 hours a day because of medical reasons. The union proposed that this contract clause not include overexposed workers or those with high urine counts or high body counts, but the company would not even discuss this health and safety issue.

The fourth proposal, Mr. Chairman, was the union's proposal on health and safety language, which became a major issue during negotiations. The union did not agree with either the company or the State that TNS was safe. The union questioned whether either the company or the State's health and safety personnel were qualified. We wanted to bring in outside professionals to do a plant health and safety evaluation, but the company refused to negotiate on the union's proposal.

I might add here, Mr. Chairman, that I was called by the director, Mr. Williams, who is sitting to my right, prior to the work stoppage and asked to make a request of NIOSH that NIOSH come in and do a plant evaluation. So the union, Mr. Chairman, did make a request. I made that request to NIOSH, and NIOSH's response was that the company had already talked to NIOSH about coming in. Then the work stoppage occurred and that was put on the back burner. But I wanted to point out that that request was made.

Tennessee law allows either party to bring in outside experts upon approval of the other party, but in this case, the company objected. During negotiations, the union also wanted to bring in their health and safety people, again prior to the strike.

The only company movement on health and safety during the entire negotiations followed the work stoppage. The company offered to agree to keep an overexposed worker on the payroll for up to 6 months, but in a different job. After 6 months, the company would have the right to layoff the employee permanently. And, two, if a worker became overexposed, the company would maintain his rate of pay for up to 5 days. After that, the company could transfer the employee to a lower-paying job. Neither of these provisions, Mr. Chairman, offer much incentive for a sound safety program, and our members at the plant recognize this.

Lastly, as I said earlier, the company respirator program was also a major unresolved issue.

So there were really in the union's mind five unresolved issues that caused the work stoppage.

On May 1, 1981, the work stoppage occurred. OCAW maintains and, through its written evidence submitted to this committee, has demonstrated that the management at TNS in fact fostered the work stoppage by refusing to address seriously and in good faith the health and safety concerns expressed by the workers at TNS. The company chose instead to continuously cloud and evade the health and safety issues by injecting their economic proposals and by insisting throughout negotiations that the conditions at the plant were safe and healthy.

Mr. Chairman, OCAW believes that the Government and Congress have a special responsibility to workers in the nuclear industry. These workers should not be forced into a work stoppage to protect their health and their lives. The choice between one's health and a paycheck is no choice at all.

Safety in nuclear plants is not a new issue with OCAW. We have fought for improved safety for our members in the nuclear industry for almost 35 years. But this is the first time that we have been unable to resolve the issue through the arbitration and negotiation process. This is the first work stoppage over only health and safety issues in a nuclear plant in our union's history.

Nuclear workers not only face the usual health hazards found common in industry, they also face the eminent danger of internal and external radiation. In order to avoid major conflicts and strikes over health and safety issues in the nuclear industry, OCAW has recommended that special committees be set up in the Departments of Labor and Energy to investigate and remedy unsafe working conditions in plants where nuclear materials are used and the dangers of radiation are present, and prior to or during the Carter administration, the Department of Energy had agreed to set up such a committee, at our request.

Mr. Chairman, I worked for over 20 years in a nuclear plant as an instrument mechanic. One of my jobs was the maintenance and calibration of radiation health and safety instruments. In each work area there were instruments to monitor the radiation levels and air contamination levels with audible alarms to warn employees to evacuate if the radiation level or air contamination level exceeded limits. Work areas that became contaminated were immediately cleaned up. Locker rooms were especially kept clean, and each employee was required to walk through a radiation monitoring system prior to leaving the plant. Before any job in a radiation area was performed, the work area was monitored for radiation and contamination levels.

Because of these precautions and the union's constant policing of the health and safety practices and standards, I felt safe working in that nuclear plant. And I might say, for some 10 years, I worked for Aerojet in a nuclear plant, and that was the procedure in an Aerojet plant. That was GulCo plant. That was the plant at the Idaho operation site.

At the TNS plant, these precautions were apparently not taken. Their air sampling equipment does not have alarms, and this equipment was sometimes shut off during the work shift if the filter runs out. Employees are not monitored for radiation when they leave the plant, leaving them unaware if they are taking radiation contamination home to their families.

We believe that the health and safety exposures and working conditions at TNS are serious, and anything but typical in a nuclear plant.

As I mentioned earlier, we have something to gain from the safe development of the nuclear industry in the United States, and we would like to see it grow, since we have the upper hand in organizing its workers, but we know it will not grow unless the public perceives it as safe. How can the public have confidence in an industry that forces its employees off the job over safety? Would you want such a facility located anywhere near you?

If there is anything we, the OCAW, have to gain from these hearings, it would be a commitment from the Federal Government to enforce the safety laws that it saw fit to write. In our opinion, we are dealing with an outlaw company that is using national security and confidence in a toothless OSHA to blatantly violate the law.

At this point, Mr. Chairman, we'll be happy to answer any questions that the committee might have.

Mr. **Gore**. Thank you very much, Mr. Hancock

How long have you been a union official?

Mr. **Hancock**. A union official as working for the international union? About 6 years.

Mr. **Gore**. I guess what I'm asking is—yes, how long have you been outside of the workplace and working for the union?

Mr. **Hancock**. I have been outside of the workplace for 6 years.

Mr. **Gore**. Six years.

Mr. **Hancock**. I started working in a nuclear plant in early 1952 and worked in that facility until about 6 years ago, but was a local union officer during most of that total period of time.

Mr. **Gore**. And I believe you said that one of the companies you worked for was Aerojet?

Mr. **Hancock**. That's correct.

Mr. **Gore**. And your experience with them was quite positive, is that correct?

Mr. **Hancock**. That's correct.

Mr. **Gore**. And are you aware of any other problems related to health and safety with Aerojet other than at TNS?

Mr. **Hancock**. No, sir.

Mr. **Gore**. All right. Could you give the subcommittee a brief description of the number of strikes that your union has had over the past 20 years?

Mr. **Hancock**. At the Idaho Falls facility where I worked, Mr. Chairman, we had 3 strikes in 30 years.

Mr. **Gore**. Three strikes in 30 years?

Mr. **Hancock**. Yes, sir. Not quite 30 years; 29 years.

Mr. **Gore**. I see. Industrywide, are strikes relatively unusual for the OCAW?

Mr. **Hancock**. Yes, sir.

Mr. **Gore**. And no other strike has occurred for health and safety reasons, is that right?

Mr. **Hancock**. In the nuclear industry. We did have a health and safety strike in the oil industry.

Mr. **Gore**. I see. Now, the company is saying that—well, they're disputing the nature of the health hazard, but beyond that, they're saying something unusual. They're saying that your position is really not one of concern about health and safety issues, but that you are pretending to be concerned about health and safety issues, but really what you're trying to do is to take over part of the management of the company. Do you understand that?

Mr. **Hancock**. I understand that, and I totally disagree with that.

Mr. **Gore**. Why are they saying that?

Mr. **Hancock**. Let me just give you a brief overview quickly of some of the things OCAW is involved in in order to alert the employees or the union members to the possible dangers that they have in the workplace.

Monthly, in our union paper for several years, we have taken specific topics and we do a detailed safety thing that goes out to every union member's home.

Mr. **Gore**. Yes.

Mr. **Hancock**. We also have district council meetings where the officers of all of the locals come in, and we hold constant educational progams on health and safety, so——

Mr. **Gore**. OK, I'm not asking you to defend your concern about health and safety.

Mr. **Hancock**. OK.

Mr. **Gore**. Let me just ask you, Mr. Able—and this will be my last question and then I will recognize my colleague—Mr. Able, you were present during the negotiations with TNS, is that right?

Mr. **Able**. That's correct.

Mr. **Gore**. And the union had what is referred to as presentation rights when the negotiations began, is that right?

Mr. **Able**. Yes, sir.

Mr. **Gore**. And when did those negotiations begin?

Mr. **Able**. They began in the latter part of March, approximately March 24.

Mr. **Gore**. All right. And did you make the presentation at that first meeting back in March?

Mr. **Able**. That's correct. I went in in an attempt to make the presentation of our proposal, and at that time the company proceeded to throw us a proposal across the table which was an economic proposal.

Mr. **Gore**. All right. Now, don't get ahead of me here now. When the negotiations on the contract began, you were the spokesman for the union?

Mr. **Able**. That's correct.

Mr. **Gore**. And your presentation centered on health and safety concerns, is that correct?

Mr. **Able**. That's correct.

Mr. **Gore**. That was the first and main problem that you brought to the attention of the company and asked them to solve, is that correct?

Mr. **Able**. That's correct.

Mr. **Gore**. At that point, the company said, "Hold on. We want to interrupt you with this proposal," and it was basically an offer to raise your pay by 25 percent, correct?

Mr. **Able**. Well, I'll clear that up a little bit. What they done, just as soon as we got into the negotiations, we didn't have no time at all to even present a proposal. They just come with us, threw the package across the table, and we told them that we were the moving party, and we expected to present our proposal because we had some extreme adverse health and safety conditions in that plant, and we were going to have to get things like that worked out before we could even talk about money, and we had an argument about a half a day before the company finally allowed us to present our proposal, which about 4 pages of our proposal was directly related to health and safety, and I told the company at that time that we were going to have to have these problems worked out. That's why we were presenting an extensive proposal on health and safety language, and normally in negotiations you have very little—in normal negotiations you have very little you present on health and safety items, but in this particular plant, due to the problems we'd had, we presented, like I say, about a 4-page document with changes that we needed in the health and safety area.

Mr. **Gore**. Could you supply that for the record?

Mr. **Hancock**. Could I just quickly make a comment?

Mr. **Gore**. Yes.

Mr. **Hancock**. Mr. Chairman, for the record we have submitted a summary of evidence, and that is included in the summary of evidence that you have received.

Mr. **Gore**. All right. If you can designate that for us to help out the subcommittee staff, I would appreciate it.

I'll come back with other questions, Mr. Able, but I want to recognize my colleague, Mr. Walker.

Mr. **Walker**. Thank you, Mr. Chairman.

Mr. Hancock, I had mentioned a document that the staff had seen earlier today that had come out of the union files with regard to the negotiating process. There's going to be no problem in us getting that document, is there?

Mr. **Hancock**. I'm not sure what document you're talking about, Mr. Walker.

Mr. **Walker**. Well, it was one that the minority staff had indicated that they had seen in the process of going through it, and we could not locate it now as a part of what we have in the files, and so I just wanted to make certain that we're going to be able to get that.

Mr. **Hancock**. I think, Mr. Walker, that that proposal is probably in this particular document that has been given to Mr. Gore already.

Mr. **Gore**. Without objection, we'll include that in the record.

[The following material was received for the record.]

PROPOSED REVISED HEALTH AND SAFETY CLAUSE FOR 1981 OCAW CHEMICAL BARGAINING POLICY

SECTION 1. The Company shall institute and maintain all necessary precautions for safeguarding the health and safety of its employees, and all employees are expected to cooperate in the implementation thereof. Both the Company and the Union recognize their mutual obligation to assist in the prevention, correction and elimination of all unhealthy and unsafe working conditions and practices.

SECTION 2. The Company shall recognize a Health and Safety Committee, consisting of designated representatives of the local union, of not less than two nor more than four people. It shall hold meetings with management as often as necessary, but not less than once each month, at a regularly scheduled time and place, for the purpose of jointly inspecting, investigating and reviewing health and safety conditions and practices. The Union Health and Safety Committee will have the responsibility of making constructive recommendations with respect thereto, including but not limited to the formulation of changes to eliminate unhealthy and unsafe conditions and practices. All matters considered and handled by the Committee shall be reduced to writing, and joint minutes of all meetings of the Committee shall be made and maintained. Time spent in connection with the work of the Committee by Union Representatives shall be considered and compensated for as their regularly assigned work. The Union designated Health and Safety Committee representative shall have the right to investigate all accidents by visiting the sites immediately and also the right of conferring with persons involved or those who may have witnessed such accidents

The Union may arrange for an inspection of facilities by representatives of the International Union and/or its designated agents.

SECTION 3. At the request of the Union Health and Safety Committee, the Company will, from time to time, retain at its expense qualified industrial health consultants, subject to the approval of the International Union President or his designee, to undertake industrial health research surveys, as decided upon by the Committee, to determine if any health hazards exist in the work place.

Such research surveys will include measurements of the exposures in the work place, the results of which will be submitted in writing to the Company, the International Union President, the Local Union and the Company by the research consultant.

At a mutually-established time, subsequent to the receipt of research survey reports, the labor-management committee will meet for the purpose of reviewing such reports and to determine the manner in which the survey's findings shall be implemented.

SECTION 4. The Company agrees to provide and maintain adequate health and safety facilities, personal protective devices, clothing and equipment at Company expense. The Company will also provide in-plant apparatus for detecting and recording potential and actual safety and health and environmental hazards, and the Company further agrees to provide a continuous training program to insure at all times that all employees are adequately trained in maintaining, handling and using such facilities and apparatus.

SECTION 5. The Company shall pay for the appropriate medical examinations by physicians or institutions. A report of all medical findings and examinations shall be provided only to the affected employee. A gross report respecting the confidentiality of those employees examined shall be provided to both labor and management.

Any employee removed from his regularly assigned job as a result of a physical examination shall continue to receive all pay, benefits and seniority status and all future increases in pay and benefits as if he/she were still assigned to that job.

SECTION 6. No employee shall be required to perform work that endangers his or any other employee's health or physical safety or under conditions which are in violation of the health and safety rules, or any local, state or Federal health or safety laws. An employee's refusal to perform such work shall not warrant or justify any present or future disciplinary action.

SECTION 7. No employee shall lose pay, benefits or any other rights provided for under their collective bargaining agreement for fulfilling any obligation consistent with this Health and Safety article and/or for carrying out any function under the Occupational Safety and Health Act of 1970 or under any other Federal, state, or municipal regulatory function on health and safety.

SECTION 8. Any dispute arising out of interpretation of this article shall be subject to the grievance procedure.

SECTION 9. The Union designated Health and Safety Commitees (not to exceed 4 members) shall receive an approved leave of absence for a time period deemed appropriate by the Union, for the purpose of receiving occupational safety and health training by the International Union. There shall be no loss of seniority or any other benefits for the time of the training. The cost of this provision will be provided by a 0.10/hour worked contribution from the company to be administrated by the International Union under all appropriate Federal laws.

Mr. Gore. I might say that those who have looked at it characterize it a little bit differently than the way it was characterized earlier, but that will be a matter that can be easily resolved by looking at it in the record, and minority staff will have an opportunity to evaluate all of the materials relevant to the negotiations from the union.

And you don't have any problem submitting all of those, do you?

Mr. Williams. We have no problem submitting our proposals.

Mr. Gore. All right.

Mr. Williams. And that's all that we submitted to the company.

Mr. Walker. That's fine. Thank you.

Just one other question with regard to the procedure and all the documents and so on: The material that was released today by this subcommittee with regard to the independent study that was made, do you intend to use that material now in your negotiations and in your appeals to NLRB?

Mr. Williams. We do intend to use it.

Mr. Walker. So, in other words, the release of that material by this subcommittee has given you a leg up that you did not have prior to this?

Mr. Williams. Oh, it supports what we were saying all the time.

Mr. Walker. OK, but in other words, because we have released that material through this committee, you have gotten something that you were not able to get before, is that right?

Mr. Williams. We could probably have gotten it, you know.

Mr. Walker. But you have been denied access before?

Mr. Williams. We had made no attempt to get it. As the union, I had made no attempt to get it.

Mr. Walker. Well, I'm not certain of that, but our understanding was that there had been an attempt to get hold of that material as a part of the——

Ms. DeHaven. Mr. Walker——

Mr. Williams. Oh, it was requested, and under the OSHA law, and the company refused to release it.

Mr. Walker. That was my understanding.

Mr. Gore. Will the gentleman yield?

Mr. Walker. I'll yield.

Mr. Gore. Thank you.

It's my understanding, first of all, that under article I of the Constitution, the prerogatives of the Congress delegated to this subcommittee can be exercised without regard to ongoing proceedings in other fora. Nevertheless, I think the record ought to indicate that the attempts through legal means to obtain the document by the union are still in the process of being resolved, and a final denial has not taken place.

The same can be said, if I am not mistaken, about the attempts of OSHA and TOSHA to obtain the document, and I think one of the lawyers for the union wished to comment on that, if my colleague would continue to yield for that purpose.

Ms. DeHaven. Thank you. I just wanted to explain to Mr. Walker that as far as the NLRB litigation is concerned, this document is probably not relevant.

Mr. Walker. Well, fine. I just wanted to establish the record here. I certainly agree with the gentleman that the whole appeals process had not been completed at this point, and it seems to me that what we had done was interfered in that process with the release of the document, and we now have it on the record that indeed the material that we released will be used by one party in the——

Mr. Gore. It's not our intention to interfere. It's our intention to pursue our mandate, and I trust that it will not have any untoward results, but I thank my colleague for yielding.

Mr. Williams. I wanted to clarify what I said. The only way we're going to use it, it basically supports what we were saying all the time for several months.

Mr. Walker. Well, I think that's fine, but that still, of course, is use of a document that previously you had been unable to get through the legal processes.

Mr. Williams. When the company was saying the place was safe all the time. They were telling us this in negotations.

Mr. Walker. And I think that that indeed may reflect on the company, and it's not my purpose to defend that. All I'm simply doing is making a case here that this subcommittee has entered into a labor negotiations process, and entered into it in a way which is, in my opinion, extra-legal.

Does the union have any evidence, based upon annualized exposure, that any worker at the TNS plant ever received more than the industrial limit of 5 rems?

Mr. Hancock. I believe, Mr. Walker, that Dr. Nelson pretty much answered that question, and the evidence that he derived or he compiled from the company records, certainly we believe is documentary evidence and sustained our views that the plant was unsafe.

Mr. Walker. Well, Dr. Nelson's material, if I look at my appendix correctly, refers to some exposure levels over a short period of time, but on an annualized period of time, when it's looking at annualized periods, it does not appear that any of the evidence on an annualized basis is over the permissible 5-rem limits under industrial standards. Is that your understanding?

Mr. Hancock. I really can't comment on that, Mr. Walker, because I really don't have firsthand knowledge of that.

Mr. Walker. The question occurred earlier today because of some testimony and the question of timing, why is it that OCAW did not ask for access for Dr. Nelson to the plant prior to the time that the strike took place?

Mr. Williams. We did. We asked to bring our health and safety department in, which Dr. Nelson is part of it.

Mr. Walker. In other words, we had testimony earlier today, and I'm sorry I wasn't here. I had another meeting. But I understand we had testimony from company officials earlier today that said that access for Dr. Nelson had not been asked for prior to the strike.

Mr. Williams. We didn't ask——

Mr. Walker. Are you saying that that——

Mr. Williams. That's not true. I'm saying that's not true.

Mr. Walker. So in other words, you're accusing the witnesses who appeared here earlier of lying under oath?

Mr. Williams. Huh?

Mr. Walker. You're accusing the witnesses who appeared here earlier of lying under oath?

Mr. Williams. Apparently, they didn't know what they were talking about. They weren't in the negotiations. That's what I'm saying. You can take it any way you want to, but that's what I'm saying, all right? I have a word for it, but you can——

Mr. Walker. You're making a rather serious charge, you understand, and I just want to clarify that the charge that you're making is——

Mr. Williams. I happened to be in the negotiations, and I happened to be one of the persons that made the request, OK?

Mr. Walker. And your request was for Dr. Nelson to visit the plant?

Mr. Williams. To bring in our health and safety department, which he is part of.

Mr. Walker. I see. Do you remember just exactly when you made that request?

Mr. Able. I can answer that. We made it in probably mid-April, probably within 2 weeks of—we made it either 2 or 3 times within 2 weeks, 2 to 3 weeks before the strike. I made it and Director Williams made it.

Mr. Walker. How long had the negotiations been going on at that point?

Mr. Able. Well, we had begun the negotiations March 24.

Mr. Williams. But it wasn't continuous. You know, it was a day or two, and then you break and come back. However, the company's response was that they were going to run the plant, they were going to run the health and safety program, and that was their business and they were going to run it their way.

Mr. Walker. How long had you represented these workers prior to even those negotiations beginning?

Mr. Hancock. Three years.

Mr. Walker. Three years. And you had not requested of the company that the health and safety personnel from your union go into the plant prior to the negotiating time, is that correct?

Mr. Hancock. That's correct.

Mr. Williams. We're trying to negotiate language so in the future they could go in when we have problems.

Mr. Walker. But you had not made that kind of a request of the company prior to the time that you entered into labor negotiations?

Mr. Williams. No.

Mr. Able. Mr. Walker, I'd like to make a comment on that. In late December or January 1981, I met with the negotiating committee, and we sat down and we were getting ready to make up a list of proposals to give to the company in the upcoming negotiations, and at this time I was astonished by what the local committee—when we got into the health and safety part of it, and they got to telling me about a lot of the problems that we had in the area that I really wasn't aware of.

Mr. Walker. And this was in what timeframe?

Mr. Able. I'd like to finish. This was January 1981.

And at that time, we would have at that time brought in our health and safety department, but the union committee, Mr. Bettis being the chairman, had asked me not to bring them in. He said, "We've got upcoming negotiations." He said, "The company has asked for time," and he said, "I think that we ought to try to work with them and give them some time." But within a couple of weeks after that, they put our people on respirators for a full 8-hour shift, and then at that time I went in to—right after I found out about all these safety problems, I went to the company and I told them at that time that we were going to have to do something about these adverse health and safety conditions, that in negotiations we were hopeful of putting together a proposal that would be acceptable to them where we could live together and our people would be able to work in a safe working place. We were hoping to get into negotiations within the next 2 or 3 weeks after that.

And then the first of March, which was about 3 weeks prior to ever getting in negotiations, Mr. Bettis called me one day, and he told me that he had been misquoted by a health and safety manager, said Mr. Hunnicutt had said that he was going to bring the workers out on strike over safety, and he said he'd been misquoted and he was concerned about it. He was worried about the company firing him. I told him to go back in there and put it from me and from him, if they didn't do something about them adverse health and safety conditions in that plant by April 30, that our people wouldn't be back in there to work.

And at this time the company official, Mr. Hunnicutt, put it in a memo, which is also in the record, to the company that Mr. Bettis had made this statement to them, which was way prior to negotiations, that we wouldn't work after April 30 unless these things were cleared up.

And as far as sitting in negotiations, Dr. Schell didn't sit in negotiations. I happened to be the chief negotiator for the union, and I do know that on at least two and possibly three occasions, that we requested that our people, our health and safety department, be brought in and be able to go through that plant, or even a third party be brought in to prove what we were telling them about safety. But all they could say is either we don't have health and safety problems or either give them more time in it.

Mr. Walker. Of course, now, back when you first learned of all these health and safety violations and the problems there—and this goes back, of course, before the negotiations began when you were investigating this—now, of course, at that time you immediately asked for the medical records of the workers, is that accurate?

Mr. Able. No, we did not. We did not.

Mr. Walker. Well, I can understand why you wouldn't want to have your personnel go into the plant, but when you came up with these kinds of situations, why wouldn't you immediately ask for medical records of the workers?

Mr. Able. Well, we didn't bring in Dr. Nelson. When Dr. Nelson came in, he immediately asked for them. When he was brought into the picture, which was around the 1st of May, he immediately asked for them.

Mr. Walker. He was working for you in January when these issues first arose; why wouldn't he immediately have been brought into the picture there, if you've got a situation which has been described to the subcommittee as being an extremely serious situation, and I have no reason to doubt that you are describing a serious situation to us. Once you have this information, why wouldn't Dr. Nelson and your health and safety people be brought immediately into the picture at that point?

Mr. ABLE. Well, one reason why they weren't brought in then was we still—I was astonished by a lot of the things I heard—I still wasn't really aware of the overexposure in the thing that had been to the people. They had brought up things that Mr. Bettis brought up here today about telling them to drink beer to flush out their kidneys and things like this. They brought this up to me in January. And, really, I didn't really realize that we had the problems we had until we really got into the thing. I realized we had problems, but I still couldn't——

Mr. WALKER. But in order to ascertain the problems, the very first thing that you would have to do is either begin examining workers or begin to look at medical records, wouldn't it be? Wouldn't that be the very first step that would be taken to either confirm what you were being told or have some reason to cast doubt on that? Wouldn't that be the first step, if we're going to act on health issues, to determine the health conditions?

Mr. HANCOCK. Mr. Walker, one of the negotiation proposals for the union was to bring in a plant evaluation, or to have a plant evaluation done. We were hopeful during negotiations that if we could have a plant evaluation study done, and some acceptable language and assurances from the company that they would correct the deficiencies, we could continue to work while we continued to work the problems out, and that was not able to be done.

Mr. WALKER. Well, I understand that, but it still doesn't really answer the question of why we wouldn't be looking at the medical records, at least doing that much. I can understand, you know, maybe there would be problems in arranging for the examinations of workers to take place and that sort of thing, but why wouldn't we be looking at the medical records immediately upon determining that there was in fact a problem?

Mr. WILLIAMS. Well, I don't think that we considered the problem as bad as it was at the time, so our efforts—and I was in on the negotiations quite a bit, particularly on health and safety issues. I worked 13½ years in a nuclear plant, Nuclear Field Services in Irwin, Tenn. Larry worked about 12 or 14 years in a nuclear plant. So we thought—our efforts were to try to negotiate language and work out a health and safety program that would be acceptable to us and to the people to correct these things, because the same work—the metal work that was being done at TNS at one time was done at Nuclear Field Services in Irwin. I worked on some of the same material that they were working on, so we thought with—we don't believe in wearing respirators 8 hours a day, because you didn't have to do it under AEC, because we filed a complaint one time and got a complaint issued that we didn't have to do routine work in respirators.

So we tried to talk to the company on these things. The company wouldn't accept any of this, other than they had a safe plant and were going to run the plant, were going to run the health and safety program, and they didn't want nobody interfering with it.

Finally, we asked them to bring in NIOSH. This was about a week or so before the contract expired. They said they would check into it. They never agreed to. They never told us they would agree to bring in NIOSH; they would just talk to them. So that never happened.

So they did finally agree in the first meeting after we went on strike, if we could work out an agreement, they would allow the president of the international union to walk through the plant one time, and that would be it. Before we went back to work, they'd allow the president of the international union, Bob Goss, to walk through the plant one time. Otherwise, we would have no access to the plant at all.

Mr. **WALKER**. Just again to lend some perspective to the record on this, I have every reason to believe, based upon the documentation I've seen, that your union is really one of the best at working in the health and safety area. You've been among the leaders in the field on this. Can you tell me how much your annual budget is for health and safety activities?

Mr. **HANCOCK**. Substantial, more so than—it's probably the most—one of the, if not the most—I would probably say it was probably the most substantial area, as far as all of the other departments. It certainly surpassed the budget of any of the other departments.

Besides that, we had a new directions grant, and we had four physicians working full time on that new directions grant, so besides our own union budget, we did have access to the new directions grant.

But we're talking about five people working fulltime, four of them being physicians.

Mr. **WALKER**. Do you have a rough ball-park figure as to how much you spend in that area?

Mr. **HANCOCK**. No, sir, I don't have a ball-park figure, but we have—

Mr. **WALKER**. Could you provide that for the record for us?

Mr. **HANCOCK**. I'll certainly ask our people, our research people, to see if they can put that together for you, Mr. Walker.

Mr. **WALKER**. OK. And also, do you have any idea what percentage of your budget goes for health and safety?

Mr. **HANCOCK**. Not at this point, but I'll see if I can get that.

Mr. **WALKER**. OK, I'd appreciate that as well.

Thank you, Mr. Chairman.

Mr. **GORE**. Without objection, we will hold the record open for that material, and if you can provide it, we'd appreciate it.

Does the union consider this strike to be solvable?

Mr. **WILLIAMS**. Yes.

Mr. **GORE**. If it were solved and your people went back to work there, do you think you could put back together a working relationship with the management that would allow expansion to proceed and allow work to be accomplished?

Mr. **WILLIAMS**. I think we can. I think with some cooperation it can be put together. It has been before; it can be again—at other places.

Mr. **GORE**. Now, this strikes me as a real tragedy and a real injustice, and one of the things that's so tragic about it is that your union has to fight it out on the picket lines with the company over the issue of whether or not a health and safety problem exists. That's one of the functions of government, particularly in this century, and that function hasn't been fulfilled.

The law which governs these operations delegates to the various States the responsibility for health and safety in nuclear facilities where no critical mass is involved.

Mr. Hancock, do you think that law, the amendments of 1959, have failed in their intent?

Mr. **HANCOCK**. Yes, sir.

Mr. **GORE**. Should the agreement State mechanism be abolished?

Mr. **HANCOCK**. Yes, sir.

Mr. **GORE**. Why?

Mr. **HANCOCK**. It's been our experience, OCAW's experience, that we have found the—and I'm not talking about all States, but I'm talking about a number of States—it's been our experience that they have been less effective in dealing with the State agencies than dealing with OSHA.

Mr. **GORE**. What are the reasons for that? Are States anxious about losing industries of this kind? Does it form the basis of competition between States to locate industries of this kind?

Mr. **HANCOCK**. I just don't believe that the States have a firm commitment to insure the health and safety of the employees who work in the plants. I don't believe there is a firm commitment in some States.

Mr. **GORE**. Mr. Williams?

Mr. **WILLIAMS**. I represent 10½ States, 10 Southern States and the southern portion of Ohio. I have three gaseous diffusion plants that are under DOE, have a private owned plant which is under NRC, which basically we have—if we have a problem, we pick up the phone and call either NRC or DOE. They're there. Something is done. We have one plant licensed and under the State of Tennessee, and it's been nothing but a disaster. I don't think the State is qualified. They were not qualified to license the plant. They're not qualified to see that the program is carried out. I think they admitted it on national television, "Sixty Minutes." I think that was that—I think you saw the attitude of the State in that program. I think it was—at least, that's the response that we're getting from all over the State now, that people feel that way.

Mr. **GORE**. Well, they'll have an opportunity to speak for themselves. I'm interested in the mechanism, the law itself, and I'm wondering if you have seen evidence that there is competition between States to locate an industry on the basis of lax enforcement?

Mr. **WILLIAMS**. I think that that is true. I think the State takes the position they want to get all the industry they can, and if they're too strict on their program, they'll go to South Carolina or North Carolina or somewhere else, which you just can't up and move a nuclear plant. You know, it's not that easy.

But I feel that the whole program, not only nuclear—I think we've got a Federal law, it was hard to pass, it's federally funded, and I don't see any place where the State ought to be involved in this law when it concerns health and safety. Let them go get the industry, but let somebody else police it.

Mr. GORE. Well, it's interesting because the national debate now is about whether or not we should have a massive new delegation of authority from the Federal Government to the States to regulate health and safety concerns in the workplace, but this experience, under the unusual law that has already delegated responsibility in this narrow area, would indicate that we need to pause for some thought about this before we go too far down that road.

Mr. HANCOCK. Could I just point something out?

Mr. GORE. Yes.

Mr. HANCOCK. One of the criticisms that we've have in dealing with the—this is dealing with the DOE owned/operated plants—is that the Department of Energy maintains their own health and safety entity, so as OCAW representatives, we not only deal with OSHA, but we deal with the health and safety within the Department of Energy, who has jurisdiction over the health and safety of all the Department of Energy plants, and then we go into all of the State operated or licensed plants. So we're dealing with many, many different segments of government on the same issue, and that becomes very difficult to contend with.

Mr. GORE. All right. Well, I'd like to thank you all very much for your testimony here today and for the work that you do.

We're going to move on to our final panel of the day.

Mr. Able, you wanted to make one concluding remark?

Mr. ABLE. Yes, one brief statement I would like to make. I know you declared it was irrelevant when Dr. Schell brought it up, but I would—on the record that he put in on the violence that had been around the plant and everything, he failed to tell the committee and the people that there have been company officials that's been convicted of assault on the strikers. There've been company officials and company guards that have shot strikers. Two strikers have been shot. And there's also been one convicted of pulling a gun on strikers. And I wanted to add that in the record to let you know that it wasn't only from our side.

And as far as a window being shot out and things like this, no one's ever been convicted of anything like that, and I wanted just to put it in the record that it has happened on both sides. It's not a one-sided thing.

Mr. GORE. Well, you know, it really shouldn't come to the kind of conflict that it's reached. If the Government was doing its job in establishing sensible, understandable standards to protect health and safety in the nuclear industry, then you wouldn't have to have an escalating conflict between labor and management to try to get a sensible approach.

We're going to make some recommendations that I hope will avoid the conflicts of this kind in the future.

Mr. HANCOCK. Mr. Gore?

Mr. GORE. Yes.

Mr. HANCOCK. I would like to read into the record the summary of evidence and ask you to have this also submitted for the record.

Mr. GORE. Well, without objection, we will receive that, and we will allow staff for the minority and the majority to review it and include those portions that either believe to be directly relevant to the proceeding.

Mr. HANCOCK. Thank you, Mr. Chairman.

Mr. Gore. Thank you all very much. We appreciate it.

Our last panel of the day consists of William Graham, director of the division of radiological health with the State of Tennessee, Department of Public Health—if you gentlemen would make your way toward the witness table—Wayne Kerr, director of the Office of State Programs with the Nuclear Regulatory Commission here in Washington, Robert Taylor, director for the State of Tennessee of the Department of Labor, Division of Occupational Safety and Health, and Cois Brown, area director with the U.S. Department of Labor of the Occupational Safety and Health Administration.

Gentlemen, I'd like to welcome all of you. Three of you are my fellow Tennesseans, and I want to extend a particular welcome to the three of you, and I take it you have no objection to being sworn.

Do we have five? Who have I missed?

Mr. Graham. Mr. West, who attends with me today. I'm Bill Graham.

Mr. Gore. OK, fine, Mr. Graham.

And, Mr. West, your first name is?

Mr. West. Charles.

Mr. Gore. Charles?

Mr. West. West.

Mr. Gore. Charles West. And your title?

Mr. West. I'm assistant director with the division of radiological health.

Mr. Gore. All right.

Mr. Graham. And we've asked him to come to also be available for questions.

Mr. Gore. That's fine. I wanted the reporter to get it right.

Now, if all of you would stand and raise your right hands and repeat after me, please? Do you solemnly swear that the testimony you're about to give will be the truth, the whole truth, and nothing but the truth, so help you, God?

Mr. Graham. I do.

Mr. West. I do.

Mr. Kerr. I do.

Mr. Taylor. I do.

Mr. Brown. I do.

Mr. Gore. Thank you very much.

We'd like to begin with you, Mr. Graham. Without objection, the entire text of your prepared statement will be included in full in the record. If you want to summarize, that's fine. If you want to present the whole thing, that's fine, too. It's at your discretion, and we invite you to proceed.

[Prepared statement of William Graham follows:]

TESTIMONY
OF THE
DIVISION OF RADIOLOGICAL HEALTH
DEPARTMENT OF PUBLIC HEALTH
STATE OF TENNESSEE
CONCERNING
TNS, INC., JONESBORO, TN

Presented by

BILL GRAHAM

Division Director

Submitted to the

Subcommittee on Investigations and Oversight

U.S. House of Representatives

December 8, 1981

Mr. Chairman and Members of the Subcommittee,

My name is Bill Graham. I live in Nashville, Tennessee where I am Director of the Division of Radiolo gical Health, Tennessee Department of Public Health. I am responsible for managing a comprehensive state wide radiation program which includes regulatory control over X-ray facilities, radioactive material facilities, monitoring of radioactivity in the environment, and response to radiation accidents.

I have with me today a member of my staff, Mr. Charles West, who will be available as a resource person, as needed. Mr. West is Assistant Director of the Division. He has conducted recent inspections at TNS and participates actively with staff in issuance of all radioactive material licenses, consequently, he has a firsthand knowledge of the plant, as viewed during his inspections. We are pleased to appear before you today and present testimony on behalf of the Tennessee Department of Public Health.

Prior to 1965, the licensing and inspection of most radioactive material facilities in Tennessee were the responsibility of the U.S. Nuclear Regulatory Commission. In 1965, Tennessee negotiated an agreement with the NRC whereby most of their licensing and regulatory authority was transferred to the State. The Tennessee Department of Public Health was designated to carry out this agreement.

TNS was licensed by our Department in February of 1970. I wish to point out, that we gave more than usual attention to the TNS license application. At that time, the Department was in the throes of a serious radiation accident at another plant, and we wanted to make as certain as possible that the TNS operation would not cause similar problems.

The NRC, as one of its oversight practices under the Federal-State agreement, makes regular evaluations of how the State conducts its affairs in regulating agreement material. Commission representatives visit Tennessee approximately annually, to make a complete review of the nuts and bolts of our program. One of the more important aspect of this review is, in our opinion, NRC's "on the job" evaluation of our staff during routine state inspections. Such an evaluation was made at TNS in November of 1980. We are also required to make semi-annual reports to the Commission of State activities and to submit copies of licenses and amendments issued. We also provide other information germane to their monitoring program. In addition, the State has pledged to use its best efforts to keep its program compatible with that of the NRC.

In our radiation program, inspections are scheduled at a frequency based upon perceived hazards. I am submitting for the record a list which defines the various categories of licenses and the inspection schedule. According to this system a routine inspection is required at the TNS Plant at least every six months.

These inspections consist of meetings with management while accompanied by employee representatives. A walk around is conducted and the manufacturing process viewed from beginning to end with special attention given to processes where employee exposure to radiation hazards is more probable. The inspector also measures levels of radiation at these sites and takes samples of loose dust from equipment or other surfaces which may contribute to worker radiation exposure.

These measurements are compared with monitoring performed by the licensee and with restrictions on the license. In addition, a review is made of the training and monitoring techniques of company health physicists or technicians whose job it is to routinely look after worker radiation health.

Occasionally, our inspectors take in-plant samples for cross check purposes. In general, however, the licensee's sampling and monitoring programs are accepted for compliance determinations after we are satisfied that the monitoring is adequate. Also, employee exposure records, maintained by the licensee, are reviewed and evaluated. In addition, the licensee is expected to exercise appropriate controls to keep employee exposures to radiation as low as reasonably achievable and in all cases, below the standards established by the regulations.

Since November 1979, we have made a total of eight inspections at TNS. Five of these were routine visits, one for prelicensing purposes and two resulting from complaints.

During each visit, several violations of the regulations and license conditions were noted. These were reported to company officials both verbally, and in writing. Each time TNS was directed to reply in writing, stating what they had done or intended to do to correct deficiencies. This Division's enforcement procedures consist of persuasion, and is ultimately followed by appropriate legal action if Division directives are refused or ignored. In most cases, timely responses were received from TNS and they agreed to correct the violations. At times, though, extensive negotiations were necessary to achieve compliance . This Division does not presently have the authority to levy civil penalties. Up to this point in time, we have been able to function quite well without them. However, this case has demonstrated to us the need for this authority as an added tool in achieving compliance with our regulations.

Mr. Chairman, to one of your questions, I wish to refer specifically. This question is found in item I. f. of your letter and reads as follows:

"Was the mandatory respirator policy at TNS, Inc., an effective solution for the inhalation of uranium dust"?

The use of respirators by TNS was evaluated by our Division as part of a license amendment request in June 1979. At the time, the company expressed no intention of establishing a mandatory full time respirator use policy but merely as an additional protective device for employees use to reduce uranium dust intake for specific procedures. However, the Division did not then nor does it now, recognize this program of respirator use as a substitute for appropriate ventilation systems to control dust exposures.

According to our understanding received during our inspection in May of 1981, the respirator policy became mandatory some five months earlier in January 1981 for some workers in the penetrator shop, when the company recognized that it had a dust problem. Thus we were not aware of the mandatory requirement for use of respirators until the May visit which was about a week following commencement of the strike. Since the levels of dust monitored in the penetrator shop exceeded the maximum allowable by only a small fraction, we felt fairly confident that workers were being protected, provided respirators were being worn correctly and consistently. The effective use of personal protective equipment, such as respirators, is diffcult for the Division to monitor and the company to enforce.

A subsequent visit has revealed that production operations in the penetrator shop have ceased and the equipment is being shipped from the site.

Mr. Chairman, your letter also contained a question regarding interactions or communications between the Tennessee Department of Public Health and Tennessee OSHA.

I wish to point out that, with exception of occupational safety aspects, the Tennessee OHSA program was intially administered by the Tennessee Department of Public Health with both Industrial Hygiene and Radiological Health aspects of the OSHA program administered by one Public Health Division.

Following passage of a State law in 1977, the Occupational Health section was removed from Public Health jurisdiction and placed under the oversight of the Tennessee Department of Labor. Along with it went the OSHA program. However, a verbal understanding was reached by the two Departments that Public Health would continue to regulate all ionizing radiation programs.

As result of this agreement, there is only occasional interaction between Tennessee OSHA and Public Health's Radiological Division.

One example of such interaction between the two agencies can be seen in the TNS investigation. Here both agencies have manifested an interest in employee exposure to uranium dust; Tennessee OSHA looking at the uranium because of its chemical toxicity and Public Health because of its radiotoxicity.

Mr. Chairman, I hope the foregoing comments provide an adequate response to the questions in your letter of invitation to testify. Mr. West and I will be happy to respond to any further questions you or other members of the Subcommittee may have.

BG/vsp/v-hold

STATEMENT OF WILLIAM GRAHAM, DIRECTOR, DIVISION OF RADIOLOGICAL HEALTH, STATE OF TENNESSEE DEPARTMENT OF PUBLIC HEALTH

Mr. **Graham**. Thank you.

Mr. Chairman and members of the subcommittee, my name is Bill Graham. I live in Nashville, Tenn., where I am director of the Division of Radiological Health, Tennessee Department of Public Health. I'm responsible for managing a comprehensive statewide radiation program, which includes regulatory control over X-ray facilities, radioactive material facilities, monitoring of the environment for radioactivity, and response to radiation accidents.

I have with me today, as I've just mentioned, a member of my staff, Mr. Charles West, who will be available as a resource person as needed. Mr. West is assistant director of the division. He has conducted recent inspections at TNS and participates actively with the staff in issuance of all radioactive material license; consequently, he has a first-hand knowledge of the plant as viewed during his inspections.

We're pleased to appear before you today and present testimony on behalf of the Tennessee Department of Public Health.

Mr. Chairman, Commissioner Folwickle sends you his personal regards.

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We are also required to make semiannual reports to the Commission of State activities and to submit copies of licenses and amendments issued. We also provide other information germane to their monitoring program. In addition, the State has pledged to use its best efforts to keep its program compatible with that of the NRC.

In our radiation program, inspections are scheduled at a frequency based upon perceived hazards. I'm submitting for the record, or I have submitted for the record, a list which defines the various categories of licenses and inspection schedule.

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The inspector also measures levels of radiation at these sites and takes samples of loose dust from equipment and other surfaces which may contribute to worker radiation exposure. These measurements are compared with monitoring performed by the licensee and with restrictions on the license. In addition, a review is made of the training and monitoring techniques of company health physicists or technicians whose job it is to routinely look after worker radiation health.

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Since November 1979, we have made a total of eight inspections at TNS. Five of these were routine visits, one for prelicensing purposes, and two resulting from complaints. During each visit, several violations of the regulations and licensing conditions were noted. These were reported to the company officials both verbally and in writing, verbally during the closing conference. Each time, TNS was directed to reply in writing to the Division, stating what they had done or intended to do to correct deficiencies.

This Division's enforcement procedures consist of persuasion, and are ultimately followed by appropriate legal action if Division directives are refused or ignored. In most cases, timely responses were received from TNS, and they agreed to correct the violations. At times, though, extensive negotiations were necessary to achieve compliance.

This Division does not presently have the authority to levy civil penalties. Up to this point in time, we have been able to function quite well without them. However, this case has demonstrated to us the need for this authority as an added tool in achieving compliance with our regulations.

I wish to mention in this regard that the Department has proposed legislation which will strengthen our program both in resources and personnel.

Mr. GORE. Mr. Graham, have you requested legislation to give you the authority to impose civil penalties?

Mr. GRAHAM. Not yet. Authority for additional personnel and additional budget.

Mr. GORE. Go ahead.

Mr. GRAHAM. We plan to do this, though, possibly not this section but—it's too late at this session.

Mr. GORE. At the session coming up?

Mr. **Graham**. At the upcoming session.

Mr. **Gore**. In January?

Mr. **Graham**. Right. We feel we don't have time to prepare the appropriate legislation for civil penalties, but we plan to propose it at the next session.

Mr. **Gore**. In 1983?

Mr. **Graham**. 1983, yes, sir.

Mr. **Gore**. Please proceed.

Mr. **Graham**. Mr. Chairman, to one of your questions, I wish to refer specifically. This question is found in item 1.f. of your letter and reads as follows:

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Mr. Chairman, your letter also contained a question regarding interaction or communications between the Tennessee Department of Public Health and Tennessee OSHA. I wish to point out that, with the exception of occupational safety aspects, the Tennessee OSHA program was initially administered by the Tennessee Department of Public Health with both industrial hygiene and radiological health aspects of the OSHA program administered by one Public Health division.

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One example of such interaction between the two agencies can be seen in the TNS investigation. Here both agencies have manifested an interest in employee exposure to uranium dust, Tennessee OSHA looking at the uranium because of its chemical toxicity, and Public Health because of its radiotoxicity.

Mr. Chairman, I hope the foregoing comments provide an adequate response to the questions in your letter of invitation to testify. Mr. West and I will be happy to respond to any further questions you or other members of the subcommittee may have.

Mr. GORE. Thank you very much, Mr. Graham.

I'll withhold the bulk of my questions until the other witnesses have completed their statements, but let me briefly ask you: One of the employees of your division who inspected TNS was a Miss Sally Hock, is that correct?

Mr. GRAHAM. Sally Hock.

Mr. GORE. Hock, Sally Hock?

Mr. GRAHAM. Right.

Mr. GORE. And she filed some inspection reports that were critical of TNS, correct?

Mr. GRAHAM. Yes, we filed many reports, as I mentioned. We made a total of eight inspections.

Mr. GORE. And she was then hired by TNS?

Mr. GRAHAM. Right.

Mr. GORE. Does that concern you?

Mr. GRAHAM. No, this was something that happens quite often. Our inspectors, our possibly more promising inspectors going in industry making inspections, they are observed by industry and you might say hired out from under us.

Mr. GORE. Oh, I see. So it's quite common for your more effective inspectors to be hired by the industries they're inspecting?

Mr. GRAHAM. I would say that's true, because of their experience and expertise in the job they do.

Mr. GORE. And perhaps because of their effectiveness?

Mr. GRAHAM. They're recognized for their ability.

Mr. GORE. All right. We'll come back for other questions.

Mr. Kerr, director of the Office of State Programs with the NRC, welcome.

Mr. KERR. Thank you.

Mr. GRAHAM. Please proceed with a summary, or as much of it as you wish.

[Prepared statement of G. Wayne Kerr follows:]

PREPARED STATEMENT OF G. WAYNE KERR, DIRECTOR, OFFICE OF STATE PROGRAMS, NUCLEAR REGULATORY COMMISSION

I am pleased to appear today before this subcommittee to provide some background on the agreement between Tennessee and NRC which enables Tennessee to regulate certain radioactive materials and specifically our interaction with Tennessee on the TNS, Inc. facility.

Prior to 1954, atomic energy activities were largely confined to the Federal Government. In that year, the enactment of the Atomic Energy Act made it possible for private commercial firms to enter the field. Because of the potential hazards, Congress determined these activities should be regulated under a system of licensing to protect the health and safety of radiation workers and the public. The Nuclear Regulatory Commission (NRC), as a successor to the Atomic Energy Commission, is now charged by Congress with this responsibility.

Protection of the public health and safety has traditionally been a State responsibility but the 1954 Act did not carve out any specific role for the States. In 1959, section 274 of the Atomic Energy Act was enacted to provide for a State role and a statutory basis under which the NRC could discontinue and the States could assume, through agreements, certain regulatory authority. The 1959 amendments made it possible for the States to regulate byproduct material (radioisotopes), source material (natural uranium and thorium), and small quantities of special nuclear materials (enriched uranium and plutonium). The Commission is required, however, to retain regulatory authority over a number of other activities including power, research and test reactors, exports and imports of nuclear materials and facilities, distribution of consumer products, and larger (fissionable) quantities of special nuclear material.

Other pertinent provisions of section 274 are that it requires NRC to periodically review Agreement State programs for compliance with section 274 of the Act and authorizes the Commission to temporarily suspend all or part of an agreement with a State if an emergency situation exists with respect to any material covered by the agreement creating danger which requires immediate action to protect health and safety and the State fails to take steps necessary to contain or eliminate the cause of the danger within a reasonable time.

The Commission is also authorized by the Act to terminate or suspend all or part of an agreement if such action is necessary to protect the public health and safety or the State has not complied with the requirements of section 274 of the Act. Such action may be requested by the Governor or initiated by the Commission. In the latter case, however, reasonable notice and opportunity for a hearing must be given to the State.

The mechanism for the discontinuance of the Commission's regulatory authority is by an agreement between the Governor of a State and the

Commission. The Governor must certify to the Commission that the State has a program for the control of radiation hazards adequate to protect the public health and safety and that the State desires to assume regulatory responsibility for the materials. After publication of a State's proposal for public comment, the Commission is required to make a finding that the State's radiation control program is compatible with the Commission's regulatory program and the State's program is adequate to protect the public health and safety. During the duration of such an agreement it is recognized that the State has the authority to regulate the materials covered by the agreement for the protection of the public health and safety from radiation hazards and the NRC retains no regulatory authority over the specific activities authorized by an individual Agreement State license. The States authority covers establishment of standards, issuance of licenses, and inspection and enforcement.

NRC conducts an extensive cooperative post-agreement program with the States. Each of the agreements between NRC and the States contains a pledge by both parties to use their best efforts to cooperate in the formulation of standards and regulatory programs and to keep each other informed of proposed changes in rules and regulatory policies and to seek each others comments and assistance. Information on licensing and inspection practices, incidents, and other technical and statistical information is exchanged with all Agreement States.

As part of this exchange of information program, the Agreement States furnish NRC, on a semi-annual basis, statistical and other information on their activites. This information is compiled and published by the Office of State Programs. The report includes information on the number of licenses, number of inspections, incidents and overexposures, leaking radioactive sources, medical misadministrations and a list of licensees authorized to handle or dispose of radioactive waste.

NRC also receives copies of all licenses issued by the Agreement States. These are reviewed to determine that they are technically correct, include appropriate license conditions and do not purport to regulate in areas reserved to the Commission. We do not keep these copies, but when errors are found, they are brought to the attention of the State. We also use these reviews to select State license casework for review during our on-site reviews of Agreement State programs.

A comprehensive training program ranging from a 10-week health physics course to specialized technical and management courses is currently sponsored by the Office of State Programs to assist the States in maintaining their capabilities and a current state of knowledge in regulatory practices.

On-site, in-depth reviews of each State program are made by NRC at intervals of 12 to 18 months. The most recent revision of the guidelines NRC uses for such reviews was published in the Federal Register on October 3, 1980 as a proposed Policy Statement. A final version has been recently approved by the Commission and was published in the Federal Register on December 4, 1981. The guide we use for reviewing Agreement State programs covers organization, administration, personnel, regulations, licensing and compliance. It contains 37 indicators and 98 guides for acceptable practice which are divided into categories to provide some indication of their relative importance. The staff is formulating, for Commission consideration, some additional possible performance based indicators for the Agreement State programs which might include means of measuring the collective performance of the State's licensees.

Our on-site reviews of Agreement State programs include reviews of selected license casework, review of inspection reports, investigations and enforcement actions, and accompaniments in the field of State inspectors. We do not review all license casework or all inspection and compliance work. We sample such work with the objective of gaining an insight into the State's practices and quality of work. We have established staff guidelines which aim at assuring that large or complex licensees are included in our review of casework or are included in our accompaniments of inspectors.

The reviews are conducted by our technical staff who have a professional health physics background. Other NRC offices supplement this program as needed by providing licensing and inspection specialists. The results of these reviews are discussed at the end of the review with the State radiation control program director and a State management official. When the need for program improvements are identified, specific recommendations are developed. Our comments are detailed in follow-up letters to the radiation control program director and management official. Copies are placed in NRC's Public Document Room and we request the States make their copies available for local public inspection. Replies are requested and, when appropriate, follow-up reviews are made.

Tennessee became an Agreement State on September 1, 1965. The Tennessee Department of Public Health's Division of Radiological Health administers the program. NRC's most recent review of the Tennessee Agreement State program was completed in October, 1980. The staff found the program to be adequate and compatible but offered comments in some areas including concern over staff turnover, which the State attributed to the salary structure for the State. We commented on the number of overdue inspections (about 10% of the 600 licenses in Tennessee). It should be noted that the State's inspection program at that time called for more frequent inspections than NRC's. Thus, by comparing the State priority system to

NRC's, the number of overdue inspections was actually 5%. While this was not considered excessive, it indicated a need for the State to begin taking corrective action to preclude further backlog growth. We reminded the State that it needs to adopt amendments to its regulations concerning packaging and transportation of radioactive materials. We also offered minor comments concerning program procedures and practices. Currently, the State meets our gidelines on staffing. The inspection backlog, which accompanied the staffing problem, is now under control.

We have conducted on-site reviews of the Tennessee program at least annually since 1966. Although some comments and recommendations were developed following most of the reviews, this is not an unusual experience. The most significant problems we identified concerned staffing levels and inspection backlogs.

From 1973 to 1978, Tennessee experienced a staffing problem (that is, a problem in obtaining adequate numbers of authorized positions). For routine regulatory programs, we recommend a professional staffing level of one to one and one-half persons per 100 licenses. At one point Tennessee's staffing level dropped to 0.65 persons per 100 licenses. The staffing level problem was caused in part by a very sharp increase in the number of licenses regulated by Tennessee that began in 1973. In

1965, when the agreement was signed, there were 180 licenses. The number rose steadily to 328 in 1972. By 1980, 8 years later, the number of licenses had nearly doubled to 610.

As staff was added by Tennessee, NRC provided opportunities for training in licensing, inspection procedures and other specialized technical areas for Tennessee personnel.

In some cases, such as staffing improvements, needed changes in the radiation control programs had to be considered by Tennessee in light of the Agency-wide needs of the Department of Public Health. Overall, however, the State has proven to be responsive to NRC comments.

In the period 1966-1979 we performed a total of 311 casework file reviews in Tennessee. Casework review specific to TNS, Inc. included an inspection file review conducted in 1979. In 1980, we performed additional file reviews specific to TNS, Inc. and a member of our staff accompanied Tennessee inspectors during a partial inspection of TNS, Inc. for the purpose of gaining first-hand information on the nature of operations at the plant.

We have also reviewed copies of enforcement correspondence exchanged between the Tennessee Division of Radiological Health and TNS, Inc. We do not maintain a 100% oversight of Agreement State licensing and compliance actions. However, we have increased our level of attention to Tennessee's actions relative to TNS, Inc. We believe that Tennessee is carrying out its regulatory responsibilities in the TNS, Inc. case in an appropriate manner.

Overall, we believe that the Tennessee program is adequate to protect the public health and safety and compatible with the programs of the Commission and the other Agreement States.

STATEMENT OF WAYNE KERR, DIRECTOR, OFFICE OF STATE PROGRAMS, NUCLEAR REGULATORY COMMISSION

Mr. KERR. Thank you, Mr. Chairman.

I'm pleased to appear today before the subcommittee to provide some background on the agreement between Tennessee and NRC which enables Tennessee to regulate certain radioactive materials, and specifically our interaction with Tennessee on the TNS, Inc., facility.

Prior to 1954, atomic energy activities were largely confined to the Federal Government. In that year, the enactment of the Atomic Energy Act made it possible for private commercial firms to enter the field. Because of the potential hazards, Congress determined these activities should be regulated under a system of licensing to protect the health and safety of radiation workers and the public. The Nuclear Regulatory Commission, as a successor to the Atomic Energy Commission, is now charged by Congress with this responsibility.

Protection of the public health and safety has traditionally been a State responsibility, but the 1954 act did not carve out any specific role for the State. In 1959, section 274 was enacted to provide for a State role and a statutory basis under which the NRC could discontinue and the States could assume, through agreements, certain regulatory authority.

The 1959 amendments made it possible for the States to regulate byproduct material, commonly called radioisotopes; source material, natural uranium and thorium; and small quantities of special nuclear materials, such as enriched uranium and plutonium.

The Commission is required, however, to retain regulatory authority over a number of other activities, including power, research and test reactors, exports and imports of nuclear materials and facilities, distribution of consumer products, and larger quantities of special nuclear material.

Other pertinent provisions of section 274 are that it requires NRC to periodically review agreement State programs for compliance with section 274 of the act, and authorizes the Commission to temporarily suspend all or part of an agreement with a State if an emergency situation exists with respect to any material covered by the agreement creating danger which requires immediate action to protect health and safety, and the State fails to take steps necessary to contain or eliminate the cause of the danger within a reasonable time.

The Commission is also authorized by the act to terminate or suspend all or part of an agreement if such action is necessary to protect the public health and safety, or the State has not complied with the requirements of section 274 of the act. Such action may be requested by the Governor or initiated by the Commission. In the latter case, however, reasonable notice and opportunity for a hearing must be given to the State.

The mechanism for the discontinuance of the Commission's authority is by an agreement between the Governor and the Commission. The Governor must certify to the Commission that the State has a program for the control of radiation hazards adequate to protect the public health and safety, and that the State desires to assume responsibility for the materials.

After publication of a State's proposal for public comment, the Commission is required to make a finding that the State's radiation control program is compatible with the Commission's regulatory program, and the State's program is adequate to protect the public health and safety.

During the duration of such an agreement, it is recognized that the State has the authority to regulate the materials covered by the agreement for the protection of the public health and safety from radiation hazards, and the NRC retains no regulatory authority over the specific activities authorized by an individual agreement State license. The State's authority covers establishment of standards, issuance of licenses, and inspection and enforcement.

NRC conducts an extensive cooperative postagreement program with the States. Each agreement between NRC and the States contains a pledge by both parties to use their best efforts to cooperate in the formulation of standards and regulatory programs, and to keep each other informed of proposed changes in rules and regulatory policies and to seek each other's comments and assistance.

Information on licensing and inspection practices, incidents, and other statistical and technical information is exchanged with all agreement States.

As a part of that program, the States furnish us, on a semiannual basis, statistical and other information. It is compiled and published by our office. The report includes information on a number of licenses, number of inspections, incidents and overexposures, leaking sources, medical misadministration, and a list of licensees authorized to handle or dispose of radioactive waste.

We also receive copies of all license issued by the agreement States. They are reviewed to determine they are technically correct, include appropriate conditions, and do not purport to regulate in areas reserved to the Commission. We do not keep the copies, but when errors are found they are brought to the attention of the State. We also use the reviews to select State license casework for review during our on-site visits or reviews of the agreement State program.

We have a comprehensive training program ranging from a 10-week health physics course to specialized technical and management courses sponsored by our office to assist the States in maintaining capabilities and a current state of knowledge in regulatory practices.

Our onsite, indepth reviews of each State program are made at intervals of 12 to 18 months. The most recent revision of the guidelines for such reviews was published in the Federal Register in October 1980 and was published in final form on December 4, 1981.

The guide we use for reviewing agreement State programs covers organization, administration, personnel, regulations, licensing, and compliance. It contains 37 indicators and 98 guides for acceptable practice, which are divided into categories to provide some indication of their relative importance.

The staff is formulating, for Commission consideration, some additional possible performance-based indicators for the agreement State programs, which might include means of measuring the collective performance of the State's licensees.

Our onsite reviews of agreement State programs include reviews of license casework, inspection reports, investigations and enforcement actions, and accompaniments in the field of State inspectors. We do not review all license casework or all inspection and compliance work. We sample such work with the objective of gaining an insight into the State's practices and quality of work.

We have established staff guidelines which aim at assuring that large or complex licensees are included in our review of casework or in the accompaniments of inspectors.

The reviews are conducted by our technical staff, who have a professional health physics background. Other NRC offices supplement the program as needed by providing licensing and inspection specialists. The results of these reviews are discussed at the end of the review with the State radiation control program director and a State management official. When the need for improvements are identified, specific recommendations are developed. Our comments are detailed in followup letters to the radiation control program director and management official. Copies are placed in NRC's public document room, and we request the States make their copies available for local public inspection. Replies are requested and, when appropriate, followup reviews are made.

Tennessee became an agreement State on September 1, 1965. The Tennessee Department of Public Health's Division of Radiological Health administers the program. Our most recent review of the program was completed in October 1980. The staff found the program to be adequate and compatible but offered comments in some areas, including concern over staff turnover, which the State attributed to the salary structure for the State. We commented on the number of overdue inspections, about 10 percent of the 600 licenses in Tennessee. It should be noted, however, that the State's inspection program at that time called for more frequent inspections than does NRC's. Thus, by comparing that system to the NRC's, the number of overdue inspections was about 5 percent. While this was not considered excessive, it indicated a need for the State to begin taking corrective action to preclude further backlog growth.

We reminded the State that it needs to adopt certain amendments to its regulations concerning packaging and transportation of radioactive materials. We also offered minor comments concerning program procedures and practices.

Currently, the State meets our guidelines on staffing. The inspection backlog, which accompanied the staffing problem, is now under control.

We have conducted onsite reviews of the Tennessee program at least annually since 1966. Although some comments and recommendations were developed following most of the reviews, this is not unusual. The most significant problems we identified did concern staffing levels and inspection backlog.

From 1973 to 1978, Tennessee experienced a staffing problem; that is, obtaining adequate numbers of authorized positions. For routine regulatory programs, we recommend a professional staffing level of one to one and a half persons per 100 licenses. At one point, Tennessee's staffing level dropped to 0.65 persons per 100 licenses.

The staffing level problem was caused in part by a sharp increase in the number of licenses regulated by Tennessee that began in 1973. In 1965 when the agreement was signed, there were 180 licenses. The number rose steadily to 328 in 1972. By 1980, 8 years later, it had nearly doubled to 610.

As staff was added by Tennessee, we provided opportunities for training in licensing, inspection procedures, and other specialized areas for Tennessee personnel.

In some cases, such as staffing improvements, needed changes in the radiation control program had to be considered by Tennessee in light of the agencywide needs of the department of public health. Overall, however, the State has proven to be responsive to NRC's comments.

In the period 1966 to—and I would say there's an editorial (sic) there; it should be 1980 in my statement—we performed a total of 311 casework file reviews in Tennessee. Casework review specific to TNS included an inspection file review conducted in 1979. In 1980, we performed additional file reviews specific to TNS, and a member of our staff accompanied Tennessee inspectors during a partial inspection for the purpose of gaining firsthand information on the nature of operations at the plant.

We have also reviewed copies of enforcement correspondence exchanged between the Tennessee Division of Radiological Health and TNS, Inc. We do not maintain a 100 percent oversight of agreement State licensing and compliance actions. However, we have increased our level of attention to their actions relative to TNS. We believe that Tennessee is carrying out its regulatory responsibilities in the TNS case in an appropriate manner.

Overall, we believe the Tennessee program is adequate to protect the public health and safety, and compatible with the programs of the Commission and other agreement States.

If I may add one comment, Mr. Chairman, because of comments made this morning about NRC regulatory guides, I want you to understand what a regulatory guide is and what it is not, and I would read a footnote that appears on the front of each regulatory guide:

Regulatory guides are issued to describe and make available to the public methods acceptable to the NRC regulatory staff of implementing specific parts of the Commission's regulations, to delineate techniques used by the staff in evaluating specific problems or postulated accidents, or to provide guidance to applicants. Regulatory guides are not substitutes for regulations and compliance with them is not required. Methods and solutions different from those set out in the guides will be acceptable if they provide a basis for the findings requisite to the issuance or continuance of a permit or license by the commission.

Second, the reference today has been almost totally to NRC's Regulatory Guide 8.22, which is inappropriate for the case being discussed. Regulatory Guide 8.22 applies to uranium mills, and Regulatory Guide 8.11 is the correct one, which is titled "Applications of Bioassay for Uranium." And when it comes time for questions, if you need to know some of the basis, I have a technical person, the chief of our occupational health branch, who can talk about specific bioassay programs and standards and what is in the guide.

Thank you, Mr. Chairman.

Mr. GORE. We'll pursue that.

Is it correct that your standards for citizens living near nuclear plants are one-tenth the guidelines for people working in a nuclear facility?

Mr. KERR. Yes, sir. The population limits are essentially 500 millirem to 1 person, whereas a person in the industry is 5 rems per year, and it can be higher than that, depending upon the records they keep, although the 500 millirems, let me add, is for an individual in the public, and as a population average, it should be 170.

Mr. GORE. Millirems?

Mr. KERR. Yes.

Mr. GORE. Why would the guide, which you say need not be enforced—why would the guideline for people working in the industry be 10 times that of the guideline for citizens living near a plant?

Mr. KERR. It's been my experience in this area and others that I think almost always occupational guidelines, regulations, or whatever they are called, are more liberal than those that are allowed for the population at large. You focus on a different segment of the population, a working segment; you don't have children involved; in the general population, you have to consider things like the younger population that are in it; but I would say that I think both of them are based on an expectation that they are set in a reasonable and safe manner.

Mr. GORE. But one definition of reasonable and safe is 10 times that of the other definition of reasonable and safe?

Mr. KERR. Right.

Mr. GORE. And the difference is age, is it, that there are no children working in the plants?

Mr. KERR. The plants, that's right. Below 18, essentially. You know, there would not be people below 18 in it, as I understand.

Mr. GORE. What about pregnant women?

Mr. KERR. Pregnant women can work in nuclear plants, yes, sir.

Mr. GORE. And the standard for pregnant women, it's OK for that to be 10 times that of the standard for civilians living near a nuclear plant?

Mr. KERR. It's my understanding the same standard applies. However, again, guidance has been developed on how licensees are expected to address the matter of pregnant women working in radiation areas, try to keep them lower, but as far as I know, it is the same limit.

Mr. GORE. We had a problem of that kind here at TNS in the case at hand, if I'm not mistaken.

Do you remember the tritium case out in Arizona?

Mr. KERR. Very well.

Mr. GORE. An elementary school was contaminated, thoroughly contaminated. It had to be evacuated and shut down; is that correct?

Mr. KERR. There was a large amount of tritium, in terms of absolute amounts of tritium, that was released in the atmosphere that went to a kitchen preparing school lunches, it went to churches and swimming pools and residences in the neighborhood. Notwithstanding these large amounts, and certainly warranted investigation, the maximum permissible concentration at the site boundary of that plant was never exceeded.

Mr. GORE. What about in the kitchen of the elementary school?

Mr. KERR. Well, there are no specific standards, per se, in the NRC regulations aimed at good product or some other item like that. Our standards are written in terms of air and water effluent limits and exposure standards.

Mr. GORE. The school was shut down, wasn't it?

Mr. KERR. I believe they closed the school for a while, yes.

Mr. GORE. It was evacuated and closed.

Mr. KERR. Yes.

Mr. GORE. That also happened in an agreement State where the NRC had delegated its responsibility to the State of Arizona, correct?

Mr. KERR. That's correct.

Mr. GORE. OK, I'd like to come back to this agreement State law.

Mr. KERR. Certainly.

Mr. GORE. Our next witness is Robert Taylor, director for the State of Tennessee of the Department of Labor, Division of OSHA.

Mr. Taylor, welcome, and please proceed with a summary or as much as you see fit, and your entire text, the text for all of our witnesses on this panel will be put in the record in full.

[The following material was received for the record:]

TESTIMONY
OF THE
DIVISION OF OCCUPATIONAL SAFETY AND HEALTH
DEPARTMENT OF LABOR
STATE OF TENNESSEE
CONCERNING
TNS, INC., JONESBORO, TN

Presented by
ROBERT B. TAYLOR
DIVISION DIRECTOR

Submitted to the
Subcommittee on Investigations and Oversight
U. S. House of Representatives

December 8, 1981

CURRICULUM VITAE - ROBERT B. TAYLOR

Date of Birth - March 12, 1934

Employed by the Tennessee Department of Labor - January 16, 1974 as Occupational Safety Engineer Specialist IV, Chief of Compliance. Promoted to Director, Division of Occupational Safety, July 1, 1975. Appointed Director of Occupational Safety and Health after merger of the Division of Occupational Safety with Division of Occupational and Radiological Health, effective July 1, 1977.

Previous professional employment includes 14 years as professional safety engineer; with Employers Insurance of Texas, Dallas, Texas. - Last position - District Engineering Manager, Southeastern Region, New Orleans, Louisiana.

Graduate - University of Oklahoma, Norman, Oklahoma - June, 1959, B.S. - Mechanical Engineering (Athletic scholarship).

Registered professional engineer, 1965, certificate number 24191, Texas (Industrial Engineering).

Certified safety professional, 1972, certificate number 2585, National Board of Certified Safety Professionals.

Short Courses: Insurance Institute of America, Inc., 1963 (examination)
Engineering Accident Prevention; Texas Employers Insurance Association, 1963 (examination)
U. S. Department of Health, Education, and Welfare - Public Health Service Center for Disease Control - "Recognition of Occupational Health Hazards", 1977 (examination) Tulane University
Industrial Toxicology, 1978, Dr. Ray Harbison, Vanderbilt University
Management by Objectives - Tennessee Department of Personnel Training Division, 1975 (examination)
National Electrical Code - Dr. Bill Watkins, American Society of Safety Engineers, Knoxville, Tennessee, 1976
Occupational Safety and Health Summer Institute, University of North Carolina at Chapel Hill, Industrial Hygiene, Toxicology & Industrial Medicine - August 1978
Occupational Safety & Health Summer Institute, Appalachian State College, Boone, N. Carolina, Safety and Ergonomics, Safety Management Information Systems, Occupational Health and the Law, August 1979
National Conference on Safety, Health, and Loss Control, Georgia Institute of Technology, Atlanta, Georgia, 1979

REVISED

Mr. Chairman and members of the Subcommittee:

My name is Robert B. Taylor, and I am Director of The Division of Occupational Safety and Health, Tennessee Department of Labor, Nashville, Tennessee.

I will respond to the letter of November 16, 1981, addressed to Harry Pullum, Chief of Health Compliance, and will personally testify at the committee's hearing on December 8, 1981.

We concur with the need to develop factual information relevant to safety and health concerns at the TNS plant in Jonesboro, Tennessee.

At the outset, we wish to point out that there has been extensive media dissemination of information that is erroneous and misleading. We offer the same information that has been ignored in non-objective reporting, and welcome the committee's assessment and recording of fact.

Tennessee's State plan for regulation of workplace safety and health has been federally approved and operational since June 1973. Its scope has always excluded, by law, any working conditions covered by the Atomic Energy Act of 1954 (42 USC 2011 et seq.). The State program interprets said provision to mean that the Nuclear Regulatory Commission, and/or its licensee, has sole jurisdiction of workplaces where in radiation-type exposures may exist due to presence of radiating materials used in the work process. TNS, Inc., is one of those plants who thus come under exclusive purview of the Nuclear Regulatory Commission.

In an attempt to achieve maximum employee protection from other types of exposures at TNS, such as Noise pollution, toxic dusts, and mechanical safety hazards, our State program inspectors have made four (4) safety and two (2) health inspection in the TNS plant.

All of those inspections were initiated prior to the worker strike and prior to any publicized concerns regarding conditions at the plant. None of the inspections were initiated at the request of any worker or the O.C.A.W. union.

Tennessee's State Occupational Safety and Health program has achieved success in attracting highly qualified professionals in all phases of its activities including safety enforcement, health enforcement, training and education, consultation, and public sector regulation. The program has achieved every level of accreditation possible under the Federal Occupational Safety and Health Administration monitoring system, and will be among the first to achieve final determination of effectiveness as provided under Section 18(e) of the Williams-Steiger Occupational Safety and Health Act of 1970.

As a response to the chairman's specific questions, I submit the following:

1. Describe your agency's methods for monitoring and evaluating health conditions in the work environment at TNS, Inc. (I feel that the committee can best be informed via visual aids. Slides have been prepared to illustrate the monitoring methodology.)

Slides 1-3

SLIDE 1-
TOTAL ASSEMBLY
SLIDE 2-
PUMP AND
TYGON TUBING
SLIDE 3-
FILTER

Samples for the toxic effects (chemical) of uranium were taken using a personal sampling pump, at a flow of approximately 2.0 liters per minute, connected to tygon tubing which leads to a filer (in a holder) at the breathing zone of the employee. The filter was a low-ash polyvinyl chloride type. The filters were analyzed by an independent laboratory* using the alpha spectroscopy method. Any exposure over 0.25 milligrams per cubic meter means the employee is overexposed to uranium (insoluble). This related to 29 CFR 1910.1000 of the TOSHA standards.

Slides 4-7

SLIDE 4-DOSIMETER
SLIDE 5-MICROPHONE
SLIDE 6-SOUND LEVEL METER
SLIDE 7-DOSIMETER READOUT

Samples for noise were taken using a General Radio Dosimeter with the microphone in the hearing zone of the employee. The dosimeter accumulates noise as a mixed noise exposure, and gives a direct readout in percent. Any exposure over 100% means the employee is overexposed to noise. The dosimeter readings are verified with a sound level meter. This relates to 29 CFR 1910.95 of the TOSHA Standards.

*First inspection samples analyzed by Tennessee Department of Public Health - Division of Radiological Health, Nashville, TN. Second inspection samples analyzed by E.A.L. Corporation, Richmond, California.

a. How often are routine inspections performed?

A priority general scheduling system was initiated by the health compliance section in April, 1979. At that time all higher priority establishments in the state were subject to be inspected, and several (probably more than 50%) have been inspected at this time. TNS, Inc., was inspected on January 13, 1981, under this priority scheduling system. Sampling was conducted at the company on January 27, March 25, and March 27, 1981. A follow-up inspection was done at the company on October 6, 1981, in which sampling was done. The samples on the follow-up revealed compliance with the citation. Since the conditions on the follow-up were not identical to the initial inspection, a re-inspection will be made when conditions change. Once conditions have stabilized at the company, re-inspections will be conducted every 2-4 years, according to the conditions at the company. Again, I would like to point out that this Division has never received a health related complaint with regards to TNS, Inc.

b. Are tests performed or samples collected at the work site?
YES.

c. Are employee exposure records reviewed and evaluated?
Yes, normally, but at TNS, Inc. we could not evaluate exposure records on the initial inspection because management officials indicated that they did not have exposure data concerning uranium dust. The company did have radiation exposure data, but this is the responsibility of the Tennessee Department of Public Health, Division of Radiological Health, not TOSHA. Also, medical data (urinary analysis) was not evaluated due to the fact that we have no legal authority to issue any violation concerning the data.

d. How often have fines or citations been issued to TNS, Inc., for health violations?
Once, on June 9, 1981, as a result of the inspection initiated on January 13, 1981. One Serious and One Nonserious Citation was issued. The Serious Citation had a penalty of $520. The Nonserious Citation consisted of two violations with $0 penalty. Abatement has been achieved and sanctions paid.

e. Has TNS, Inc. responded in a timely and effective manner in correcting any health violations?
Yes. The citation was issued on June 9, 1981, and all violations were corrected by October 6, 1981. The company has always been cooperative with our Division's enforcement activities.

f. Was the madatory respirator policy an effective solution for the problem of inhalation of uranium dust?

Please refer to the TOSHA Standard (29 CFR 1910.134(a)(1)), identical to the federal standards, which states that "In the control of these occupational diseases caused by breathing air contaminated with dusts,..., the primary objective shall be to prevent atmospheric contamination. This shall be accomplished as far as feasible by accepted engineering control measures....When effective engineering controls are...being instituted, appropriate respirators shall be used pursuant...to 29 CFR 1910.134(b). The company was providing appropriate respirators as an interim measure until engineering controls were installed. This is the primary reason the uranium citation was issued as Nonserious instead of Serious.* Our evaluation that the air-purifying respirators were temporarily adequate was based only upon observations and analysis during the inspection.

*According to both State and Federal Industrial Hygiene Field Operations Manuals.

2. What interaction of communication do you have with the U.S. Occupational Safety and Health Administration?

The Tennessee Program adopts identical standards as promulgated by federal OSHA and used the same field operational procedures.

a. Are evaluations of your program conducted by the U.S. OSHA?

During the entire 8-year history of the program, federal OSHA monitors have been domiciled in Nashville and have continuously perused files, observed activity and periodically prepared evaluation reports.

b. Are you required to submit any written reports or materials to the U. S. OSHA on a regular basis?

The State responds, in written reporting, to every federal evaluation report.

c. Are your health inspectors periodically accompanied by U. S. OSHA representatives on their inspections?

Yes, (see previous statement).

3. What interation or communcation do you have with the Tennessee State Bureau of Radiological Health?

The Tennessee Department of Labor responds to all situations relating to occupational health exposure. In all cases relating to radiation exposure the Department confers with the Tennessee Department of Public Health, Division of Radiological Health, to determine jurisdiction and, if necessary, requests assistance. This assistance includes technical advice and, where necessary, the loan of appropriate measuring equipment. In some instances, this has included joint inspections with enforcement of our individual laws. The relationship has been a cooperative one and has existed for many years.

50-503. Definitions. -- For the purpose of this chapter:

(a) "Commissioner of labor" means the chief executive officer of the Tennessee Department of Labor. For the purposes of all sections of this chapter other than sections 50-562 - 50-564, it includes any person appointed, designated, or deputized to perform the duties or to exercise the powers assigned to the commissioner of labor under this chapter.

(b) Deleted. (Acts 1977, ch. 111, section 2.)

(c) "Federal standard: means a standard adopted by a rule promulgated under section 6 of the Federal Occupational Safety and Health Act of 1970, P.L. 91-596 (U.S.C., title 29, section 656).

(d) "Commission" means the occupational safety and health review commission established pursuant to sections 50-554 - 50-558.

(e) "Committee" means an occupational safety and health advisory committee established pursuant to section 50-515.

(f) "Employer" means a person engaged in a business who has one or more employees and includes county, metropolitan and municipal governments.

(g) "Employee" means any person performing services for another under a contract of hire, including minors, whether lawfully or unlawfully employed, persons in executive positions, and shall include county, metropolitan and municipal government employees.

(h) "Person" means one or more individuals, partnerships, associations, corporations, business trusts, legal representatives, or any organized group of persons.

(i) "Standard" means an occupational safety and health standard promulgated by the commissioner of labor which requires conditions, or the adoption or the use of one or more practices, means, methods, operations or processes reasonably necessary or appropriate to provide safe and healthful employment and places of employment.

(j) "Issue" means a category of like industrial, occupational or hazard groupings which affects the safety and health of employment or place of employment and is suggested by the groupings in Code of Federal Regulations, title 29, chapter XVII, Part 1910. (Acts 1972, ch. 561, section 2; 1974, ch. 585, section 1 & 2; 1977, ch. 111, section 2.)

50-504. Application of act -- Exceptions -- Coverage-- The provisions of this chapter or any standard or regulation promulgated pursuant to this chapter shall apply to all employers and employees except:

(a) The federal government, including its departments, agencies, and instrumentalities;

(b) Employees whose safety and health are subject to protection under the Atomic Energy Act of 1954 as amended (U.S.C., title 42, sections 2011-2296);

(c) Employees whose safety and health are subject to protection under the Federal Coal Mine Health and Safety Act of 1969 (U.S.C., title 30, section 801), the Federal Metal and Nonmetallic Mine Safety Act (U.S.C., title 30, section 725), or title 58 of this Code;

(d) Railroad employees whose safety and health are subject to protection under the Federal Safety Appliances Act (U.S.C., title 45, sections 1-50) or the Federal Railroad Safety Act of 1970 (U.S.C., title 45, sections 431-441);

(e) Domestic workers;

and affected by the scope or provisions of the standard have reached substantial agreement on its adoption, (2) was formulated in a manner which afforded an opportunity for diverse views to be considered and (3) has been designated as such a standard by the Secretary, after consultation with other appropriate Federal agencies.

(10) The term "established Federal standard" means any operative occupational safety and health standard established by any agency of the United States and presently in effect, or contained in any Act of Congress in force on the date of enactment of this Act.

(11) The term "Committee" means the National Advisory Committee on Occupational Safety and Health established under this Act.

(12) The term "Director" means the Director of the National Institute for Occupational Safety and Health.

(13) The term "Institute" means the National Institute for Occupational Safety and Health established under this Act.

(14) The term "Workmen's Compensation Commission" means the National Commission on State Workmen's Compensation Laws established under this Act.

APPLICABILITY OF THIS ACT

SEC. 4. (a) This Act shall apply with respect to employment performed in a workplace in a State, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, American Samoa, Guam, the Trust Territory of the Pacific Islands, Wake Island, Outer Continental Shelf lands defined in the Outer Continental Shelf Lands Act, Johnston Island, and the Canal Zone. The Secretary of the Interior shall, by regulation, provide for judicial enforcement of this Act by the courts established for areas in which there are no United States district courts having jurisdiction.

67 Stat. 462.
43 USC 1331 note.

(b)(1) Nothing in this Act shall apply to working conditions of employees with respect to which other Federal agencies, and State agencies acting under section 274 of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2021), exercise statutory authority to prescribe or enforce standards or regulations affecting occupational safety or health.

73 Stat. 688.

(2) The safety and health standards promulgated under the Act of June 30, 1936, commonly known as the Walsh-Healey Act (41 U.S.C. 35 et seq.), the Service Contract Act of 1965 (41 U.S.C. 351 et seq.), Public Law 91-54, Act of August 9, 1969 (40 U.S.C. 333), Public Law 85-742, Act of August 23, 1958 (33 U.S.C. 941), and the National Foundation on Arts and Humanities Act (20 U.S.C. 951 et seq.) are superseded on the effective date of corresponding standards, promulgated under this Act, which are determined by the Secretary to be more effective. Standards issued under the laws listed in this paragraph and in effect on or after the effective date of this Act shall be deemed to be occupational safety and health standards issued under this Act, as well as under such other Acts.

49 Stat. 2036.
79 Stat. 1034.
83 Stat. 96.
72 Stat. 835.
79 Stat. 845;
Ante, p. 443.

(3) The Secretary shall, within three years after the effective date of this Act, report to the Congress his recommendations for legislation to avoid unnecessary duplication and to achieve coordination between this Act and other Federal laws.

Report to Congress.

INDUSTRIAL TOXICOLOGY

THIRD EDITION

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among nonsmoking miners, cigarette smoking appears to increase the cancer risk (Lundin et al., 1969). Saccamanno et al. (1965) have shown that among the Colorado Plateau miners dying of lung cancer the predominant cell was of the small undifferentiated type (57 percent). The remainder were of the epidermoid type. The tendency of the undifferentiated small cell tumors to metastasize early and extensively was thought to account for the rapid clinical course and early death after onset of symptoms in the United States uranium miners. The association of these small cell lung tumors with increasing exposure supported a relationship with exposure to air-borne radiation. Further, the predominantly hilar origin of the tumors implied that the large bronchi of uranium miners received a higher carcinogenic dose than did other parts of the lung.

reports of worker illness among chemists

Uranium has had other industrial uses in the past in both the ceramics and steel industries. Hamilton and Hardy (1949, p. 48) included the report by Leconte describing chronic nephritis caused by uranium compounds in 1854; his observations have been confirmed since that time. Wilson and Smales (1946) reported finding from 2 to 10 μg/L of uranium in the urine samples of six chemists in contact with magnesium uranyl acetate for two months previous to the tests. The medical examinations of these chemists revealed no abnormalities. Apparently it is necessary to have a soluble uranium compound to produce renal damage in man. According to Hodge (1956), who performed exhaustive experimental animal studies in the 1940s, uranium is one of the most toxic elements chemically but is absorbed into the body with difficulty. A diffusible uranium-bicarbonate complex is formed in the blood and is filtered through the glomerulus, but the bicarbonate is resorbed in the proximal convoluted tubule and the liberated uranyl ions react with the protein membranes to produce injury. Rupture of the cells and discharge of their contents into the urine leads to albuminuria, aminoaciduria, and release of catalase and phosphatase. The major histologic site of uranium injury is in the distal third of the proximal convoluted tubule. Taking advantage of the release of catalase, as just described, Dounce (1947) developed a test using catalase in the urine as an index of uranium poisoning.

Natural uranium (uranium-238) is an alpha emitter that is only weakly radioactive because of its extremely long physical half-life, 4.5×10^9 years. Its toxic hazard resides not in its radiation effects but in its chemical effects on the renal tubules. It is usually measured in bioassay samples by photofluorimetric rather than radiochemical techniques, and workers handling ordinary uranium are usually monitored by chemical determinations of uri-

STATEMENT OF ROBERT TAYLOR, DIRECTOR, STATE OF TENNESSEE, DEPARTMENT OF LABOR, DIVISION OF OCCUPATIONAL SAFETY AND HEALTH

Mr. TAYLOR. Thank you, Mr. Chairman, members of the committee.

I am Robert Taylor, and I am director of the division of occupational safety and health, Tennessee Department of Labor, in Nashville.

I concur with the need to develop factual information relevant to safety and health concerns at the TNS plant in Jonesboro.

At the outset, I wish to point out that there has been extensive media dissemination of information that is both erroneous and misleading with respect to our program, and we offer the same information that has been ignored in nonobjective reporting, and we welcome the committee's assessment and recording of fact.

Tennessee's State plan for regulation of workplace safety and health has been federally approved and operational since June 1973. Its scope has always excluded, by law, any working conditions covered by the Atomic Energy Act of 1954. The State program interprets that provision to mean that the Nuclear Regulatory Commission and/or its licensee has sole jurisdiction of workplaces wherein radiation-type exposures may exist due to the presence of radiating materials used in the work process. TNS, Inc., is one of those plants who thus come under exclusive purview of the Nuclear Regulatory Commission as regards ionizing radiation.

In an attempt to achieve maximum employee protection from other types of exposures at TNS, such as noise pollution, toxic dust, and mechanical safety hazards, our State program inspectors have made four safety inspections and two health inspections in the TNS plant since 1973. All of these inspections were initiated prior to the worker strike and prior to any publicized concerns regarding conditions at the plant. None of these inspections were initiated at the request of any worker or the OCAW Union. We have had complaints from OCAW concerning other Tennessee plants, but never from the TNS plant.

Tennessee's State occupational safety and health program has achieved success in attracting highly qualified professionals in all phases of its activities, including safety enforcement, health enforcement, training and education, consultation, and public sector regulation. The program has achieved every level of accreditation possible under the Federal Occupational Safety and Health Administration monitoring system and will be among the first to achieve final determination of effectiveness as provided under section 18(e) of the Williams-Steiger Occupational Safety and Health Act of 1970. There were specific questions directed for response from the State program, and I'd like to submit the following responses to those questions with regard to the Agency's methods for monitoring and evaluating health conditions in the work environment at TNS. I did have slides made, which I will submit to the committee for their examination, and meanwhile, in lieu of showing those, I'll describe those methods for monitoring and evaluating health conditions.

We took samples of uranium dust using a personal sampling pump at a flow of approximately 2 liters per minute, connected to tygon tubing, which leads to a filter in a holder at the breathing zone of the employee. This filter was a low-ash polyvinyl chloride type. The filters were analyzed by an independent laboratory using the alpha spectroscopy method, and any exposure over 0.25 milligrams per cubic meter means that the employee is overexposed to uranium insoluble. This related to our standard 29 CFR 1910.1000, which is identical to the Federal standard.

With regard to the noise exposure that we encountered, we sampled for noise using a general radio dosimeter with the microphone in the hearing zone. The dosimeter accumulates noise as a mixed noise exposure, gives a direct readout in percent, and any exposure over 100 percent means that employee is overexposed to noise. The dosimeter readings are verified with a sound-level meter, which is operated by the inspector. This related to our standard 29 CFR 1910.95, which again is identical to the Federal standard.

How often are routine inspections performed? We initiated, by means of a scheduling system which is intended to pinpoint priority scheduling of workplaces in April 1979, with regard to health inspections. At that time, all higher priority establishments in the State were subject to be inspected, and several, probably more than 50 percent, have been inspected at this time.

TNS was inspected on January 13, 1981, under this scheduling system. Sampling was conducted at the company on January 27, March 25, and March 27. A citation was subsequently issued, and a followup inspection was conducted on October 6, in which additional sampling was done. The samplings on the followup revealed compliance with the standard requirements. Since the conditions on the followup were not identical to the initial inspection, a reinspection will be made if and when conditions change or, if I might add, if and when any employee asks us to come in and evaluate any working condition.

Under the system with which we're operating and conducted the general schedule inspection, we reevaluate those operations every 2 to 4 years, according to the conditions at the company.

Again, I would like to point out that the division has never received a health or safety-related complaint with regards to TNS, Inc. I might add also that having jurisdiction for at least 85,000 private sector workplaces and 2 million workers in the State of Tennessee, we rely heavily on employees to inform us of their concerns and of a need for us to come into a workplace.

We did perform tests and samples at the work site. We did not review the employee exposure records that related to radiation exposure, because the inspector felt that those records were the responsibility of the Department of Public Health's concern for radiating exposure.

We have issued a citation, as I previously mentioned. One of the citations was labeled as serious and one other than serious. The committee should understand that these terms serious and other than serious do not carry the generic meaning of the words and shouldn't be interpreted as such. Serious and other than serious mean only what Federal OSHA determines that they mean with regard to standards violations. Therefore, we cited serious and issued a penalty of $520 for the noise violation. The remainder of the citation consisted of two other violations with no penalty. Abatement has been achieved on all portions of the citations, and the sanctions paid.

TNS, Inc., responded in a timely and effective manner in correcting the violations that were cited.

With regard to consideration of the mandatory respirator policy as a solution for the problem of inhalation of uranium dust, we've never considered the respirator policy as a solution for the dust. Our TOSHA standard, which again is identical to the Federal standard, states that: "In the control of these occupational diseases caused by breathing air contaminated with dusts * * * the primary objective shall be to prevent atmospheric contamination. This shall be accomplished as far as feasible by accepted engineering control measures.* * * When effective engineering controls are * * * being instituted, appropriate respirators shall be used pursuant" to the standard related to personal protective equipment.

The company was providing appropriate respirators at the time of the inspection. We considered them an appropriate interim measure until engineering controls were installed, and that's the primary reason that the citation was issued with respect to the dust as other than serious, because of the air purifying respirators that were being utilized during that inspection. This follows the field operations procedure precisely in both our procedure manuals and the federal program procedure manuals.

As far as the interaction or communication with the U.S. Department of Safety and Health Administration, its continuous and ongoing. We're required and monitored from the standpoint that we have to provide as effective a program as the Federal Government. We have to adopt identical standards. We do so. We adopt the same field operational procedures, and we consider our program more effective than the program might be if we did not have a State program.

They evaluate our program on a continuous basis, and they have domiciled monitors in Nashville, and they maintain a continuity of monitoring with regard to reviewing files, observing our activity, and they prepare a lot of reports.

We are required to submit written responses on a regular basis to those things that we're asked to respond to, and we have in every case.

Our health inspectors, our industrial hygienists, are periodically accompanied by the Federal OSHA representative.

With regard to our interaction with the Radiological Health that's been described previously, we respond to all situations relating to the safety and health exposure that are brought to our attention. In the cases that are relating to radiation, the Department confers with the Department of RadHealth to determine jurisdiction and where we can assist with our standards and where it may involve their help, we ask them for assistance, and it's been a cooperative relationship, and it's existed for many years.

Mr. Chairman, it's been a revelation to me that in following our procedures precisely, and in January 1981, having no indication, no knowledge of any problem related to the TNS plant—as far as we're concerned, we have a peaceful little community there; it's one of our 85,000 plants for which we have some responsibility—our own random sampling scheduling system brought us into that workplace. We found a violation of our standards. We cited it. We achieved compliance with that standard. We intend to maintain compliance with it. If it's necessary to show our teeth in order to maintain compliance, we are capable of doing so, and have the proper capability of doing so. It's mind boggling to me that having done this and not having had any complaints or prior knowledge of any problems there, I find myself testifying at a hearing and defending the State program, which in blanket terms has been indicted simply because it is a State program, and in general which has been confused with the responsibilities of the Nuclear Regulatory Commission.

It's my testimony that the program is effective, and I challenge anyone to prove that that's not so.

I'll respond to any other questions that you may have.

Mr. GORE. Thank you, Mr. Taylor.

Now, there is a distinction between a health inspection and a safety inspection, isn't there?

Mr. TAYLOR. Yes, sir. A health inspection is conducted by a qualified industrial hygienist.

Mr. GORE. When was your first health inspection of the TNS plant?

Mr. TAYLOR. In January 1981.

Mr. GORE. And that was the first one in 11 years, was it not?

Mr. TAYLOR. Our program has only existed 7½ years.

Mr. GORE. That was the first health inspection in——

Mr. TAYLOR. That's the first industrial hygienist from our Department, our Division, that's correct. There had never been a complaint which compelled us to enter that workplace. Many of our higher priority workplaces under our rating system have not been inspected simply because our hygienists are directed to higher priority things other than random sampling scheduling by the incident of catastrophes, fatalities, or complaints.

Mr. GORE. Now, in this first health inspection in 7½ years, you found in one area of the plant airborne concentrations of uranium dust 13 times the levels considered reasonable and safe; is that correct?

Mr. TAYLOR. Thirteen times exceeding the standard limit, that's correct.

Mr. GORE. Yet you classified that as nonserious, correct?

Mr. TAYLOR. Yes, sir, and I explained that previously also, in that the term serious does not carry its generic meaning when you——

Mr. GORE. What does the word serious mean to you in this context?

Mr. TAYLOR. The same thing it means to Federal OSHA. The other than serious connotation associated with that citation was in lieu of—because of the fact that employees were wearing respirators, which our standard describes as being acceptable on a temporary basis, and for which the manual procedure tells us to cite other than serious.

Mr. GORE. Well, what if it had been 100 times the——

Mr. Taylor. It still would have been cited nonserious, because of the wearing of the respirators.

Mr. Gore. It still would have been nonserious? What about 1,000 times?

Mr. Taylor. It still would have been cited other than serious.

Mr. Gore. Because they were wearing respirators?

Mr. Taylor. As a temporary interim measure, in lieu of engineering controls that we insisted should be installed.

Mr. Gore. They wore them for 3 or 4 months.

Mr. Taylor. Mr. Chairman, the citing of the citation as serious would only accomplish one thing: It would allow us to impose monetary sanctions. If the bottom line is to get abatement of the standard, I fail to see the relevance of the citing as serious or other than serious.

Mr. Gore. If you decided that the reason it wasn't serious was because they were wearing respirators, I take it then you checked on the effectiveness of the respirators, whether they were actually doing the job you were assuming they were doing?

Mr. Taylor. As far as the scope of that particular inspection. Again, our inspections are different from the Nuclear Regulatory Commission, in that——

Mr. Gore. But the question is did you check on the effectiveness of the respirators?

Mr. Taylor. Yes, we did. We evaluated the effectiveness of the respirator on the employees that were sampled and in the work areas where the respirators were being used.

Mr. Gore. Did it surprise you to hear the evidence presented here earlier that people working in the plant wearing respirators had continual readings well above the guidelines?

Mr. Taylor. It doesn't surprise me that effectiveness of respirators varies from day to day.

Mr. Gore. Well, the effectiveness of respirators might also be dependent upon the concentrations in the environment; wouldn't they be?

Mr. Taylor. Certainly.

Mr. Gore. Did it surprise you to find that the company's consultant found airborne dust concentrations five times the maximum permissible concentration after the strike occurred, 6 months after you cited them for a nonserious violation?

Mr. Taylor. We cited our standard for airborne dust, and it doesn't surprise me that someone else might also find excessive concentrations of dust. We were concerned about the airborne dust, and achieved abatement with that particular citation.

Mr. Gore. Did you examine the urinary analysis data?

Mr. Taylor. No, sir.

Mr. Gore. Well, wouldn't that give a clue to the effectiveness of the respirators?

Mr. Taylor. It wouldn't have made any difference in our citation. We would have cited the same standard and insisted on compliance, without regard to the medical data.

Mr. Gore. Let's suppose that you had airborne concentrations 13 times the acceptable standards, and you found that the urinary analysis indicated the workers were absorbing many times the acceptable amounts into their bloodstream in spite of the fact they were wearing respirators? Would you then still call it nonserious?

Mr. TAYLOR. Mr. Chairman, we were interested in enforcing our standard. The connotation as serious or other than serious has absolutely no bearing on the enforcement of the standard.

Mr. GORE. But the standard wasn't enforced.

Mr. TAYLOR. The standard was enforced.

Mr. GORE. It was not. Six months later the company's own consultant found concentrations five times the MPC.

Mr. TAYLOR. In our follow-up inspection, our sampling revealed that the concentration of dust was below the standard level.

Mr. GORE. Well, let's come back to that.

Our final witness is Mr. Cois Brown, with the Federal OSHA Office.

And, Mr. Brown, your entire text will be put in the record at this point, and if you can summarize, we'd appreciate it.

Mr. BROWN. Thank you, Mr. Chairman.

[Prepared Statement of Cois Brown follows:]

STATEMENT OF COIS M. BROWN
AREA DIRECTOR, NASHVILLE, TENNESSEE
OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
U.S. DEPARTMENT OF LABOR
BEFORE THE
SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT
OF THE
HOUSE COMMITTEE ON SCIENCE AND TECHNOLOGY

December 8, 1981

Mr. Chairman, Members of the Subcommittee:

I am Cois Brown, Area Director for the Occupational Safety and Health Administration (OSHA) of the U.S. Department of Labor in Nashville, Tennessee. I am one of twelve Area Directors in OSHA's Region IV, which is headquartered in Atlanta and includes eight southeastern States. Four States in the region -- Kentucky, North Carolina, South Carolina and Tennessee -- operate their own federally approved job safety and health programs under section 18 of the Occupational Safety and Health Act of 1970 (the Act). Each State program is monitored by a Federal OSHA area office in that State.

As Federal Area Director in Tennessee, one of my major responsibilities is to monitor the operations of the State OSHA agency to assure that it enforces a program in accordance with the provisions of the Act.

I am also responsible for exercising direct Federal authority over workplace hazards in locations of exclusive Federal jurisdiction as well as hazards which are addressed by Federal safety and health standards but are not covered by State regulations. In addition, my duties include providing assistance to other Federal agencies in protecting their employees.

As the Subcommittee has requested, I will explain, first, OSHA's methods for monitoring and evaluating the occupational safety and health program of the State of Tennessee and, second, the interaction that OSHA's Nashville area office and Tennessee OSHA (TOSHA) have had with regard to workplace safety and health problems at the facility of Tennessee Nuclear Specialties, Inc. (T.N.S.) in Jonesboro.

OSHA first approved a developmental job safety and health "Plan" for the state of Tennessee in June 1973. In December 1974, the Federal agency entered into an operational status agreement with the State, indicating that Tennessee had enacted the necessary legislation for a job safety and health program, that a review board had been established, that safety and health standards had been issued and that adequate staff were on hand to run the program. Once the operational status agreement was in effect, Federal enforcement which duplicated Tennessee effort ceased. Three and a half years later, on May 3, 1978, OSHA formally certified the Tennessee State Plan, thereby signifying that the State had in place all the structural components necessary for effective operation of its program.

In all phases of development of a State program, or Plan, as it is known in our agency, OSHA has responsibility to assure that employees in the State are covered as under the Federal program. Federal monitoring of a State Plan continues as long as a Plan remains in effect. In addition, Federal OSHA retains authority to protect workers and enforce standards in areas where the State has chosen not to exercise jurisdiction, as, for example, in maritime activities in Tennessee.

The methods employed by Federal OSHA to monitor State programs are determined by various regulations including those set forth in 29 CFR 1954. This section of the Federal Code outlines the purpose and scope of the monitoring system, the exercise of Federal discretionary authority, the reports required of States, and the visits of Federal monitoring personnel to State job safety and health agencies. Also found in 29 CFR

1902 are the indices of effectiveness which States are required to meet under the Act in order to win and retain Federal OSHA's approval of their Plans.

In addition to regulations promulgated in the Federal Code, OSHA has developed detailed administrative procedures to accomplish the goal of effective evaluation and monitoring of State programs. These procedures are found, for the most part, in Chapter 17 of the agency's Field Operations Manual.

The principal means relied on by OSHA to evaluate overall operation of a State's enforcement program are intensive review of State inspection case files and on-site assessment of State compliance performance by Federal monitors who accompany State inspectors on workplace visits. Another check on State performance occurs when OSHA responds to a "CASPA" -- a complaint about State program administration. In addition, the OSHA Area Director maintains close contact with State program administrators. This essential day-to-day relationship between State and Federal personnel brings areas of concern to light. If monitoring evidence indicates a possible deficiency or problem in some area of a State Plan, OSHA's Area Office may conduct a special study of that particular aspect of the Plan.

Such studies, along with findings from routine monitoring and recommendations for improvements in the Plan, are described in the evaluation report issued annually by the Assistant Secretary of Labor for Occupational Safety and Health. In addition, in Region IV, the Area Director provides an interim report directly to the State. Thus, during the course of a year, Tennessee is provided with two formal reports: an interim report from the Region and a final report from the Assistant Secretary. These reports include comparisons with Federal performance, identification of deficiencies, and recognition when appropriate of effective State operations.

The State, in turn, is required by the Act to submit reports to OSHA on a regular basis, and Tennessee OSHA does so. These include: (1) a quarterly report giving enforcement data and a summary of activities on standards and variances, (2) periodic fiscal reports, and (3) an annual grant application summarizing current enforcement, consultation and training activities and giving projections for similar activities to be conducted in the following year with funds provided under section 23(g) of the Act.

Since inception of the Tennessee Plan, OSHA's annual evaluation report has regularly cited deficiencies in the State program. These shortcomings have never been serious enough to threaten Federal approval of the program and have, moreover, declined in number and significance as the Plan has matured.

When deficiencies are noted in a State Plan, OSHA recommends remedial measures. The State is expected to correct all such defects, but has discretion to choose solutions other than those suggested by the Federal agency. Federal OSHA, in turn, monitors the corrective action and reports on it in the next annual evaluation of the Plan. Under the Act, OSHA has the authority to withdraw approval of a State Plan -- and its fifty percent Federal funding -- if the overall Plan is deemed defective. This has not been the case with the Tennessee Plan, or for that matter with any State Plan to date. In OSHA's judgment, TOSHA has taken adequate steps to correct the deficiencies noted in the Federal agency's annual evaluation reports.

The Subcommittee has asked me to describe the interaction between Federal OSHA and Tennessee OSHA with respect to the facility of Tennessee Nuclear Specialties, Inc. (T.N.S.) in Jonesboro, Tennessee. Let me begin by describing the relationship between our authority and that of the Nuclear Regulatory Commission (NRC).

Section 4(b)(1) of the Occupational Safety and Health Act of 1970 provides that:

> Nothing in this Act shall apply to working conditions of employees with respect to which other Federal agencies, and State agencies acting under section 274 of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2021), exercise statutory authority to prescribe or enforce standards or regulations affecting occupational safety or health.

In this case, the NRC has an agreement with the Tennessee Division of Radiological Health that the State agency will protect employees from all hazards involving source, byproduct or special nuclear material as defined by the Atomic Energy Act. OSHA retains authority to enforce standards controlling all hazards that are not addressed by NRC requirements. Many hazards which do not involve exposure to radiation are nonetheless closely related to prevention of radiation hazards. Thus, it may be necessary for OSHA and NRC (or the relevant State agencies) to determine on a case-by-case basis how their respective responsibilities for hazards should be implemented. In this instance, were Federal OSHA responsible, we would not have the authority necessary to have conducted a general schedule inspection in this facility, nor cited for hazards regulated by the NRC. It should be noted, however, that while State OSHA agencies like TOSHA have similar restrictions on their authority, the restrictions are not an exact duplicate of the restrictions on OSHA. We can only conclude that in this case the two concerned State agencies were in agreement that Tennessee OSHA under State law should exercise jurisdiction in the matter.

Federal OSHA's enforcement authority in Tennessee, and in all State-plan States, is further limited, as I have indicated, to gaps in the State program -- that is, to enforcement of any Federal health or safety standards for which there are no parallel regulations under the State Plan. OSHA's involvement with T.N.S. arose from such a gap in the TOSHA program.

An inadvertent delay occurred in Tennessee's promulgation of a standard equivalent to the Federal standard for access to employee exposure and medical records. Generally when Federal OSHA promulgates a new standard, the States follow suit, issuing an identical standard or one that is equally effective. A Federal standard for "Access to Employee Exposure and Medical Records" was issued on May 23, 1980, and went into effect on August 21, 1980. Although TOSHA has initiated such a standard, technical difficulties have prevented completion of the promulgation process. Tennessee is expected to issue an Access standard shortly. Until the State regulation is in effect, OSHA has responsibility for enforcement of the Federal standard.

Consequently OSHA's Nashville Area Office has investigated two complaints from the Oil, Chemical and Atomic Workers union (OCAW) which relate to the Federal Access standard; TOSHA was advised prior to our investigation. The first of these complaints, received on June 24, 1981, alleged that the employer had failed to release employee exposure and medical records within fifteen days of request as required by the standard [29 CFR 1910.20 (e)(1)(i)]. On July 7 and 8, 1981, OSHA conducted an inspection of T.N.S. and as a result, issued a citation to the company for violating the fifteen-day requirement. The violation was classified as "other than serious"; no penalty was assessed. In the meantime, T.N.S. honored all employee requests for access to medical and exposure records. OSHA has since withdrawn the citation.

OCAW filed a second complaint on September 3, 1981, alleging that T.N.S. refused to release a report of a private consultant, Radiation Management Corporation of Lorton, Virginia. The complainant claimed that the report contained results or analyses of employees' exposure records. If so, under the Access standard, the report would be accessible to employees, their representatives, and recognized bargaining agents. On September 15, 1981, the Nashville Area Office conducted an on-site investigation of the complaint. T.N.S. maintained that the report was not related to employee exposures or analyses thereof and refused to release, or allow OSHA to review, the report.

My Office, after careful consideration of all options, notified the complainant that additional evidence or information about the contents of the consultant's report was needed if we were to pursue the matter. On October 27, 1981, the complainant appealed to OSHA's Regional Administrator in Region IV. On November 25, the Region responded by asking T.N.S. to provide answers to specific questions about the contents of the report in order to determine whether records covered by the Access standard are involved. We are waiting for the company's reply.

In the course of OSHA's routine monitoring of the Tennessee Plan, problems at the T.N.S. Jonesboro facility did not become apparent. No CASPA's (complaints about State program administration) regarding T.N.S. were received from employees or their union representatives. While the T.N.S. inspection case file was not selected for review in OSHA's random selection process, the Nashville Area Office has now initiated a full review of the State's T.N.S. case file in light of questions raised about certain TOSHA inspection procedures in a recent broadcast of "Sixty Minutes."

That concludes my formal remarks. I will be happy to answer any questions the Subcommittee may have.

STATEMENT OF COIS BROWN, AREA DIRECTOR, U.S. DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

Mr. **Brown**. I will read a summarized version of my prepared text, which has been submitted to the subcommittee.

Mr. **Gore**. Can I interrupt you one moment, Mr. Brown?

Mr. **Brown**. Yes, sir.

Mr. **Gore**. The follow-up inspection you were talking about which satisfied you that everything was OK, when was that follow-up inspection?

Mr. **Taylor**. That inspection was in October of 1981.

Mr. **Gore**. Ten months later?

Mr. **Taylor**. Well, the citation was not——

Mr. **Gore**. Ten months later?

Mr. **Taylor**. The citation was not issued until June.

Mr. **Gore**. But the inspection that——

Mr. **Taylor**. It was initiated in January. Sampling took place for several weeks following the initial day that the inspection was initiated.

Mr. **Gore**. The first inspection was in January, and you found——

Mr. **Taylor**. That's the day the hygienist began. That's not the day he sampled.

Mr. **Gore**. What was the day he sampled?

Mr. **Taylor**. Approximately 2 weeks later, he sampled, and approximately a week later after that, I believe, he sampled again.

Mr. **Gore**. All right. So in February he found concentrations 13 times the acceptable——

Mr. **Taylor**. No, sir, the evaluation that it was 13 times beyond the standard requirements was not arrived at until almost June.

Mr. **Gore**. Until later?

Mr. **Taylor**. Yes.

Mr. **Gore**. All right. And then the follow-up was 5 months after that?

Mr. **Taylor**. In October, that's correct.

Mr. **Gore**. OK.

Mr. Brown, excuse me for interrupting you. Go ahead.

Mr. **Brown**. Yes, sir, Mr. Chairman, members of the subcommittee, I am Cois Brown, area director for OSHA, U.S. Department of Labor in Nashville, Tenn.

There are 12 area directors in OSHA's region IV, which is headquartered in Atlanta, Ga., and includes eight Southeastern States. Four States in the region—Kentucky, North Carolina, South Carolina, and Tennessee—operate their own federally approved job safety and health programs under section 18 of the Occupational Safety and Health Act of 1970. Each State is monitored by a Federal OSHA area office in that State. One of my major responsibilities is to monitor the operations of the State OSHA agency to assure that it enforces a program in accordance with provisions of the act.

As the subcommittee has required, I will explain, first of all, OSHA's method for monitoring and evaluating the Occupational Safety and Health program of the State of Tennessee, and, second, the interaction that OSHA's Nashville area office and the Tennessee OSHA office have had with regard to the workplace safety and health problem at the facility in question, TNS, Inc., in Jonesboro, Tenn.

OSHA first approved a developmental job safety and health plan for the State of Tennessee in June 1973. On May 3, 1978, OSHA formally certified the Tennessee State plan, thereby signifying that the State had in place all of the structural components necessary for effective operation of its program.

In all phases of the development of the State program, or plan, as it is called in our Agency, OSHA has responsibility to assure that the employees of the State are covered as under a Federal program. The Federal monitoring of a State plan continues as long as the plan remains in effect. In addition, Federal OSHA retains authority to protect workers and enforce standards in areas where the State has chosen not to exercise jurisdiction as, for example, in the maritime industry in the State of Tennessee.

The methods employed by Federal OSHA to monitor the State programs are determined by various regulations, including those set forth in the Federal Code 29 CFR 1954.

In addition to these regulations, OSHA has developed detailed administrative procedures for evaluating and monitoring State programs. These procedures are found, for the most part, in chapter 17 of the Agency's Field Operations Manual.

The principal means relied on by OSHA to evaluate overall operations of the State's enforcement program are, No. 1, intensive review of the State's inspection case files. No. 2, on-site assessment of the State's compliance performance by Federal monitors, who accompany State inspectors on workplace visits.

Another check on State's performance occurs when OSHA responds to a CASPA, or complaint about a State's program administration.

In addition, the OSHA area director maintains close contact with the State program administrators. If monitoring evidence indicates a possible deficiency or problem in some area of the State plan, OSHA's area office may conduct a special study of that particular aspect of the plan. Such studies, along with the findings from routine monitoring and recommendations for improvement in the plan, are described in the evaluation report issued annually by the Assistant Secretary of Labor for Occupational Safety and Health.

In addition, in region IV the area director provides an interim report directly to the State. These reports include comparisons with Federal performance, identification of deficiencies, and recognition when appropriate of effective State operations.

The State, in turn, is required by the act to submit reports to OSHA on a regular basis, and the Tennessee Occupational Safety and Health Group has done so.

Since inception of the Tennessee Plan, OSHA's annual evaluation report has regularly cited deficiencies in the State program. These shortcomings have never been serious enough to threaten Federal approval of the program and have, moreover, declined in number and significance as the plan has matured.

Tennessee, in our judgment, has a good and effective overall program, and has taken adequate steps to correct any deficiencies noted in OSHA's annual evaluation report.

The subcommittee has asked me to describe the interactions between the Federal OSHA and the Tennessee OSHA with respect to TNS, Jonesboro, Tenn. Let me begin by describing the relationship between our authority and that of the Nuclear Regulatory Commission.

Section 4(b)(1) of the Occupational Safety and Health Act of 1970 provides that:

> Nothing in this act shall apply to working conditions of employees with respect to which other Federal agencies and State agencies acting under section 274 of the Atomic Energy Act of 1954, as amended, exercise statutory authority to prescribe or enforce standards or regulations affecting occupational safety and health.

In this case, the NRC has an agreement with the Tennessee Division of Radiological Health to the effect that the State agency will protect employees from all hazards involving source, byproduct or special nuclear materials as defined by the Atomic Energy Act.

OSHA retains authority to enforce standards controlling all hazards that are not addressed by NRC requirements.

It may be necessary for OSHA and NRC, or the relevant State agency, to determine on a case-by-case basis how their respective responsibilities for hazards should be implemented.

In this case, were a Federal agency responsible, we would not have had the authority necessary to have conducted a general schedule inspection in this facility, or cited the hazards regulated by NRC. It should be noted, though, that while the State agencies like TOSHA and the Radiological Health people have similar restrictions on their authority, these restrictions are not an exact duplicate of those restrictions on OSHA.

Federal OSHA's enforcement authority in Tennessee, and in all State-plan States, is further limited to gaps in the State program; that is, to enforcement of any Federal health or safety standard for which there are no parallel regulations under the State plan. OSHA's involvement at TNS arose from just such a gap in the TOSHA program.

An inadvertent delay occurred in Tennessee's promulgation of a standard equivalent to a Federal standard for access to employee exposure and medical records. Generally, when the Federal OSHA promulgates a new standard, the States follow suit, issuing an identical standard or one that is equally restrictive.

A Federal standard for access to employee exposure and medical records was issued on May 23, 1980, and went into effect on August 21, 1980. Although TOSHA has initiated such a standard, technical difficulties have prevented completion of the promulgation process. Tennessee is expected to issue an access standard shortly. Until the State regulation is in effect, OSHA has responsibility for enforcement of the Federal standard.

Consequently, OSHA's Nashville Area Office has investigated two complaints from the Oil, Chemical and Atomic Workers Union which relate to the Federal access standard. TOSHA was advised prior to our investigation.

The first of these complaints, received on June 24, 1981, alleged that the employer had failed to release employee exposure and medical records within the 15 days of request, as required by the standard. On July 7 and 8, 1981, OSHA conducted an inspection of TNS and, as a result, issued a citation to the company for violating the 15-day requirement. The violation was classified as other than serious. No penalty was assessed.

In the meantime, TNS honored all employee requests for access to medical and exposure records. OSHA has since withdrawn the citation.

OCAW filed a second complaint on September 3, 1981, alleging that TNS refused to release a report of a private consultant, which we've heard about already in this testimony. The complainant complained that the report contained results or analyses of employee exposure records. If so, under the access standard, the report would be accessible to employees, their representatives, and recognized bargaining agents.

On September 15, 1981, the Nashville Area Office conducted an on-site investigation of the complaint. TNS maintained that the report was not related to employee exposures or analysis thereof, and refused to release or allow OSHA to review the report.

My office, after careful consideration of all options, notified the complainant that additional evidence or information about the contents of the consultant's report was needed if we were to pursue the matter.

On October 27, 1981, OCAW appealed to OSHA's regional administrator in region IV. On November 25, the region responded by asking TNS to provide answers to specific questions about the contents of the report, in order to determine whether or not records covered by the access standard are involved. We are awaiting the company's reply.

In the course of OSHA's routine monitoring of the Tennessee plan, problems at the TNS Jonesboro facility did not become apparent. No CASPA, or complaint about the State's program administration, regarding TNS were received, either from employees or their union representatives.

While the TNS inspection case file was not selected for review in OSHA's random selection process, the Nashville area office has now initiated a full review of the State's TNS case file, in light of the questions raised about certain TOSHA inspection procedures in a recent broadcast of "Sixty Minutes."

This concludes my formal remarks, and I'll be happy to answer any questions that the subcommittee might have.

Thank you very much.

Mr. **Gore**. Thank you very much.

Mr. Graham, you were quoted in a newspaper article last Sunday as saying that you can't put faith in the urinalysis results because the bottles could have been purposely contaminated. Do you really believe that might have happened?

Mr. **Graham**. I say there's a possibility. Some data that we have collected from the company has led to believe this might be a possibility. I'm searching now through my file here for that particular record, but what the record contained—I'll ask Mr. West to look for it.

Mr. **Gore**. Let me help you. I think I know what you're referring to. There were a couple of extremely high concentrations. There were a large number of concentrations above the standards, but there were a couple of extremely high concentrations, right?

Mr. **Graham**. That's part of it. What I'm referring to is successive tests for uranium in the urine, and we have records from the company files where on successive days a uranium content in the analyses showed a drop, very drastic drop. In other words——

Mr. **Gore**. Inconsistent with the half life of the uranium?

Mr. **Graham**. Right, the biological half life. For example, there was one that on one day registered about 1,600 micrograms per liter, and on the next day it registered 6, and that's not consistent with the biological half life of the uranium.

Mr. **Gore**. Now, who had control of the urine samples?

Mr. **Graham**. The analyses or the collection?

Mr. **Gore**. The collection. Was this the company?

Mr. **Graham**. The company has control of the collection of samples.

Mr. **Gore**. So because of inconsistencies between the expected half life pattern and the sharp drop in——

Mr. **Graham**. There were several inconsistencies.

Mr. **Gore** [continuing]. In successive samples, one of the two readings was in error, but there's no reason to suspect that employees would intentionally contaminate samples, is there?

Mr. **Graham**. No, I didn't mean to insinuate that the employees were at fault here.

Mr. **Gore**. All right.

Mr. **Graham**. I just insinuated that there's reason to question the validity of the samples.

Mr. **Gore**. Now, how many visits did the Bureau of Radiological Health make to the TNS plant in the last 2 years?

Mr. **Graham**. I presented in my testimony that we made eight.

Mr. **Gore**. Eight.

Mr. **Graham**. Five of these were routine visits, one visit was for a prelicensing inspection, and two resulting from complaints.

Mr. **Gore**. Were there any violations that kept recurring during that period?

Mr. **Graham**. Yes, sir.

Mr. **Gore**. In fact, you had an average of 10 violations per inspection.

Mr. **Graham**. I haven't done an average on that.

Mr. **Gore**. We have.

Mr. **Graham**. But the violation, I suppose, which continued to occur was the citation for not having engineering safeguards.

Mr. **Gore**. Yes.

Mr. **Graham**. And the company finally assured us, or gave reasonable assurance that these would be installed as soon as R. & D. was done at their California plant.

Mr. **Gore**. Well, they were waiting until it was more profitable to do it. They wanted to wait until the process had changed. That's really what was going on, isn't it? They were upgrading the plant. They had plans at some point in the future to change the process?

Mr. **Graham**. We didn't detect this during our inspection.

Mr. **Gore**. Now, one of your reports from September 20, 1979, concludes that TNS had a, quote, "general lack of radiation safety program."—lack of radiation safety program—"the lack of a well-defined respirator program, and overexposures of personnel, and had failed to report these overexposures." That sounds pretty serious. What did you do about that?

Mr. **Graham**. We have to operate within our regulations. I mentioned during my testimony that we do not have civil penalties, and we have to deal with the company using persuasive methods, and it's only as a final resort that we go to the court.

Mr. **Gore**. So you wrote a letter to them about this?

Mr. **Graham**. Right.

Mr. **Gore**. And that's really all that you did, right?

Mr. **Graham**. Well, the company came back in response and assured us that they had corrected our violations.

Mr. **Gore**. Well, later on, some of the same violations were still found in later inspections.

Mr. **Graham**. Well, the one I mentioned—the one I can recall is the one regarding engineering safeguards.

Mr. **Gore**. And airborne dust concentrations?

Mr. **Graham**. Right.

Mr. **Gore**. Yes.

Mr. **Graham**. But the company at that time was using respirators, and our standards are based upon what the employee inhales, and not what is found in the ambient air.

Mr. **Gore**. Well, over a year later, a year after that inspection in September of 1979, you were still advising the company that their radiation program was inadequate and that the personnel precautions were not being taken, correct?

Mr. **Graham**. I think that's correct.

Mr. **Gore**. Well, your testimony here is that the division was doing a good job of protecting workers' health.

Mr. **Graham**. Well, we didn't recognize any of those violations as imminent health hazards, and therefore we had to resort to our standard.

Mr. **Gore**. Lack of radiation safety program, isn't that a hazard to the employees?

Mr. **Graham**. Possibly those words were a little strong. We found indications that there radiation safety program could be improved.

Mr. **Gore**. In other words, you think maybe you were too tough on them in the September 20, 1979, letter and maybe this was worded too harshly?

Mr. **Graham**. I don't think I'm saying that, but I think that each time we cited the company, it wasn't necessarily for the same violation, and so at one inspection it may be one thing that would cause us to cite them for not having appropriate radiation safety provisions. At another time, it would be something else.

Mr. **Gore**. Well, without objection, we'll put all of the inspection reports in the record, and I think they speak for themselves.

[The following material was received for the record.]

December 3, 1979

Tennessee Nuclear Specialties, Inc.
Post Office Box 138
Jonesboro, Tennessee 37659

Attention: Mr. Jean Soppet, President

Gentlemen:

Thank you for the cooperation given Johnny C. Graves, Lewis R. Barber, and me during the inspection on September 20 and 21, 1979, of the activities conducted under Radioactive Material License Number S-9909-F4. After reviewing the data collected, it appears that certain of your activities were not conducted in full compliance with "State Regulations for Protection Against Radiation" and certain conditions of your license in that:

1. The radiation safety program, as referenced in Condition 13 of your license, did not appear to be administered adequately to provide the maximum degree of protection for your employees.

2. Evaluations, instructions, and actions concerning the functioning of your respiratory protection program were not properly maintained as required by 1200-2-4-.05(4) of "State Regulations for Protection Against Radiation".

3. There are no provisions in your program for assessing the individual intakes of radioactivity by exposed individuals, contrary to 1200-2-5-.09(2) of "State Regulations for Protection Against Radiation".

* 4. Personnel training in precautions or procedures to minimize radiation exposure was inadequate, contrary to 1200-2-5-.14(2)(a)2.(ii) of "State Regulations for Protection Against Radiation".

   NOTE: This refers to consistently high exposures being received by your personnel, and the observation that an employee did not realize that exposure could be received while resting on a derby he was cleaning.

5. Personnel were not adequately trained in measures to maintain respiratory protective equipment in effective condition, contrary to Condition 13 of your license.

   NOTE: A respirator without any protective covering was noted setting on a work bench in the thorium machine area.

6. Continuous air monitoring, with a minimum of daily filter collection frequency, was not being conducted, contrary to Condition 13 of your license.

7. Smear test and instrument surveys of front offices and uncontrolled outside areas were not being conducted, contrary to Condition 13 of your license.

8. Instruction in the proper use of personnel monitoring equipment was inadequate, contrary to 1200-2-5-.11(2) of "State Regulations for Protection Against Radiation".

   NOTE: Personnel were not requesting replacements for pocket dosimeters that were dropped in contaminated areas and which consequently "moved off scale".

9. An individual was exposed to radiation in excess of applicable limits, contrary to 1200-2-5-.03(1)(b) of "State Regulations for Protection Against Radiation".

10. An individual was exposed to radiation in excess of applicable limits, contrary to 1200-2-5-.03(1)(c) of "State Regulations for Protection Against Radiation".

11. Proper notification was not made to the Department concerning the exposure of personnel to radiation in excess of applicable limits, contrary to 1200-2-5-.26(1) of "State Regulations for Protection Against Radiation".

12. Proper notification was not made to personnel exposed to radiation in excess of applicable limits, contrary to 1200-2-5-.26(2) of "State Regulations for Protection Against Radiation".

*13. Personnel monitoring records were inadequate and incomplete, contrary to 1200-2-5-.22(1) of "State Regulations for Protection Against Radiation".

   NOTE: On the pocket dosimeter records, there were many instances where exposures received were indicated only as "moved off scale", and dosimeter readings were recorded in incorrect units (mR/hr); and, estimates of exposures received by your personnel in cases of lost or contaminated film badges were not being made.

14. A proper evaluation of the radiation hazard due to an explosion in a reduction furnace was not made, contrary to 1200-2-5-.10 of "State Regulations for Protection Against Radiation".

15. Adequate surveys for evaluating radiation hazards were not being conducted, contrary to 1200-2-5-.10 of "State Regulations for Protection Against Radiation".

    NOTE: Personnel and environmental monitoring was not being conducted during the times that the Health and Safety Manager is absent from your facility, nor were surveys being conducted in unrestricted areas.

16. Results of radiation surveys were not being recorded in proper units, contrary to 1200-2-5-.22(2) of "State Regulations for Protection Against Radiation".

    NOTE: This refers to the notation of "Mci/cc" on all of your facility's survey records, as well as the failure to convert from CPM to uCi/ml on waste water monitoring reports.

It is requested that the Department be informed within 15 days of the action taken to correct these deficiencies and to prevent their recurrence.

The deficiencies noted in Items 4 and 13 were previously called to your attention following an inspection of this license on September 24, 1974. Furthermore, it appears that a severe laxity in your facility's radiation safety program has developed. Immediate attention should be given to the upgrading of this program.

Sincerely,

Sally L. Hock
Radiological Physicist
Division of Radiological Health

SLH/kla 36-11

cc: Mr. Robert J. McCracken, Vice-President

9/19
FROM CPW To BG
[illegible]
INFORMATION
SUGGESTIONS CPW
APPROVAL
REPLY BY.....................
TO BE SIGNED BY.....................

C2-212 Cordell Hull Building

September 17, 1980

TNS, Incorporated
P.O. Box 158
Jonesboro, Tennessee 37659

Attention: Gene McCracken

Gentlemen:

Thank you for the cooperation given to Sally Hock and me during the investigation on April 10 and 11, 1980 of the reported over exposure of an employee to Uranium as indicated by urinalysis. After reviewing the data collected it cannot be conclusively stated that the individual did not receive such an exposure. In fact, the data points to several areas or situations that would be conducive to intake of such contaminant some of which are in violation of "State Regulations for Protection Against Radiation". These are:

1) Training of employees appeared to be inadequate. This is in violation of 1200-2-5-.14(2)

2) The entire area of systems and devices for airborne contamination control should be reviewed as dust problems appeared to be a central theme of the employees interviewed. This is a violation of 1200-2-5-.01(2)

3) Also there were several indications that the system of bioassay sample collection appeared such as to provide opportunity for obtaining unreliable results.

It is request that we be informed with 15 days of the action taken or planned to correct the above items.

Sincerely,

Charles P. West
Assistant Division Director
Division of Radiological Health

CPW/cjg 4-4

9/2 FROM JEG TO ~~[illegible]~~ 9/3
BG
INFORMATION ~~HWO~~
SUGGESTIONS ~~CH~~
APPROVAL JEG
REPLY BY............
TO BE SIGNED BY............ 9/3

C2-212 Cordell Hull Building

August 25, 1980

T.N.S., Inc.
Highway 11E
P. O. Box 158
Jonesboro, TN 37659

Attention: Robert J. McCracken
Vice President

Gentlemen:

Thank you for the cooperation given me during the inspection on May 6 through 9, 1980, of the activities conducted under Radioactive Material License number S-9009-F4. After reviewing the data collected, it appears that certain of your activities were not conducted in full compliance with "State Regulations for Protection Against Radiation" and a certain condition of your license in that:

1. The radiation safety program, as referenced in Condition 13 of your license, did not appear to be administered adequately to provide the maximum degree of protection for your employees.

   Note: As evidenced by your facility's air monitoring, instrument survey, and smear survey records, it is imperative that measures be taken to reduce the radiation levels and contamination in the restricted areas. Personnel monitoring records indicate that those personnel working in these areas are consistently receiving high exposures and overexposures (see Items 5 and 6 below).

2. Personnel were not adequately instructed in precautions and/or procedures to minimize radiation exposure, contrary to 1200-2-5-.14(2)(a)2.(ii) of "State Regulations for Protection Against Radiation".

   Note: Consistently high exposures of personnel to radiation seems to be due in part to poor quality training of personnel in radiation safety. This theory is supported by interviews with personnel at your facility, in which dissatisfaction was expressed regarding radiation safety training at T.N.S.

3. Radiation and contamination levels in unrestricted areas were in excess of the limits for uncontrolled areas at your facility, contrary to Condition 13 of your license.

4. Radioactive material contamination found in unrestricted areas appeared to be the result of improper control at the point differentiating the restricted and unrestricted areas, contrary to Condition 13 of your license.

   Note: Representatives of this Department have noted during interviews/inspections at your facility that protective shoe covers are often worn by plant personnel into uncontrolled areas. Contamination found in these uncontrolled areas, as evidenced in your survey records and discussed in Item 3, indicated a great need for a revision of your change rooms which would provide better control between the "contaminated" and "clean" sides of these rooms.

5. Personnel were exposed to radiation in excess of applicable limits, contrary to 1200-2-5-.03(1)(a) of "State Regulations for Protection Against Radiation".

   Note: This refers to two whole body exposures received by personnel at your facility in the third quarter of 1979.

6. An individual was exposed to radiation in excess of applicable limits, contrary to 1200-2-5-.03(1)(b) of "State Regulations for Protection Against Radiation".

   Note: [redacted] received an extremity overexposure in the third quarter of 1979.

7. Proper notification was not made to individuals receiving radiation exposure in excess of applicable limits, as noted in Items 5 and 6, contrary to 1200-2-5-.25(5) of "State Regulations for Protection Against Radiation".

8. Proper notification was not made to the Department concerning exposure of personnel to radiation in excess of applicable limits, as noted in Items 5 and 6, contrary to 1200-2-5-.26(1) of "State Regulations for Protection Against Radiation".

9. Records pertaining to radioactive material shipments were not being ~~maintained in full accordance with U.S. Department of Transportation~~ Regulations contrary to 1200-2-10-.30 of "State Regulations for Protection Against Radiation".

   Note: This refers to several improper entries on shipping records.

10. ~~Personnel were not properly instructed in the use of personnel monitoring~~ equipment, contrary to ~~1200-2-5-.11(2) of "State Regulations for~~ Protection Against Radiation".

    Note: This refers to the fact that many film badges are contaminated with radioactive material.

11. Radiation surveys were not performed as necessary, contrary to 1200-2-5-.10 of "State Regulations for Protection Against Radiation".

    Note: This refers to a time period when alpha contamination surveys were not performed due to the fact that the available instruments were down for repair.

It is requested that the Department be informed within 15 days of the action taken to correct these deficiencies and to prevent their recurrence.

Items 1, 2, 6, 7, 8, and 11 were previously called to your attention following an inspection at your facility on September 20 and 21, 1979.

Sincerely,

Sally L. Hock
Radiological Physicist
Division of Radiological Health

SLH/gmg 2-6

cc: Robert Bagnoli, President

1200-2-5-.14(1)(a)6 requires that this document be posted within two (2) working days after its receipt in a sufficient number of places to permit workers involved in registered activities to observe it and it shall remain posted for a minimum of five (5) working days or until all corrective action has been completed, whichever is longer.

1/29 1/30
FROM JFG TO CPD
BG 2/1C
INFORMATION
SUGGESTIONS CH
APPROVAL
REPLY BY..........
TO BE SIGNED BY..........

C2-212 Cordell Hull Building

January 29, 1981

TNS, Inc.
P.O. Box 158
Old Highway 11-E
Jonesboro, TN 37659

Attention: Robert Bagnoli, Vice-President

Gentlemen:

Thank you for the cooperation given Johnny C. Graves and me during the inspection on November 18 through 20, 1980, of the activities conducted under Radioactive Material License number S-9009-F4. After reviewing the data collected, it appears that certain of your activities were not conducted in full compliance with "State Regulations for Protection Against Radiation" and certain conditions of your license in that:

(1) Decontamination activities were performed which were not authorized by Radioactive Material License S-9009-F4.

✓ (2) The radiation safety program, as referenced in Condition 13 of your license, did not appear to be administered adequately to provide the maximum degree of protection for your employees.

Note: Beta, gamma level determinations were not used to minimize exposure to employees.

(3) Surveys for evaluating radiation hazards were not being adequately conducted, contrary to 1200-2-5-.10 of "State Regualations for Protection Against Radiation".

Note: The placement of the high volume air sampler in the blending and retort breakout area for small derbies, did not permit the proper evaluation of airborne radioactivity in that area.

(4) Radiation surveys were not performed as necessary, contrary to 1200-2-5-.10 of "State Regulations for Protection Against Radiation".

Note: Personnel survey capabilities were not available in change rooms.

(5) Personnel training in precautions or procedures to minimize radiation exposure was inadequate, contrary to 1200-2-5-.19(2)(a)2. (iii) of "State Regulations for Protection Against Radiation".

Note: It appeared that certain employees did not realize that exposure could be received while resting or leaning on derbies or lines of penetrators.

(6) An individual was exposed to radiation in excess of applicable limits, contrary to 1200-2-5-.03(1)(c) of "State Regulations for Protection Against Radiation".

Note: This refers to an overexposure during the third quarter of 1980.

(7) Personnel were not provided proper personnel monitoring devices, contrary to 1200-2-5-.11 of "State Regulations for Protection Against Radiation".

Note: Personnel handling radioactive materials were not provided appropriate monitoring devices for monitoring exposures to the hand and forearm.

(8) Personnel were not adequately instructed in the proper use of personnel monitoring equipment, contrary to 1200-2-5-.11 (2) of "State Regulations for Protection Against Radiation".

Note: As evidenced by personnel monitoring records, personnel did not appear to be adequately instructed in the precautions necessary to avoid contamination of personnel monitoring devices.

(9) Records of documentation of use of personnel monitoring devices were inappropriate, contrary to 1200-2-5-.22(1).

Note: This refers to records which documented area TLD badges as "visitor" badges.

(10) Personnel Monitoring records were not adequately maintained, contrary to 1200-2-5-.22(1) of "State Regulations for Protection Against Radiation".

Note: No estimates of personnel exposures were made for contaminated badges.

(11) Water discharged to the holding pond exceeded the concentration limits submitted in the license application and referenced in Condition 13 of your license.

(12) Records of waste disposal were not adequately maintained, contrary to 1200-2-5-.22 (2) of "State Regulations for Protection Against Radiation".

Note: This is in reference to improper entries on the wastewater monitoring records.

(13) Changes in administration and management were made without notification to the Department, contrary to information referenced in Condition 13 of your license.

(14) Posting at entrances into restricted areas was inadequate, contrary to statements mdae in applications and referenced in Condition 13 of your license.

(15) Posting of documents was inadequate, contrary to 1200-2-5-.14(1) of "State Regulations for Protection Against Radiation".

It is requested that the Department be informed within 15 days of the action taken to correct these deficiencies and to prevent their recurrence.

Several of the items of noncompliance indicated above have been called to your attention in letters reflecting the results of previous inspections. It appears that sufficient effort is not being exerted to prevent the recurrence of these items. Special attention will be given to your response concerning the method(s) and controls instituted to prevent such recurrence.

Sincerely,

Stephen C. Brooks
Radiological Physicist
Division of Radiological Health

SCB/JCG/tjo 1-5

cc: Jerry Hoynacki
By-Products Manager

1200-2-5-.14(1(a)6 requires that this document be posted within two (2) working days after its receipt in a sufficient number of places to permit workers involved in licensed activities to observe it and it shall remain posted for a minimum of five (5) working days or until all corrective action has been completed, whichever is longer.

ROM [illegible] 5/8
[illegible] 5/14
INFORMATION BG 5/14
SUGGESTIONS
APPROVAL [illegible]
REPLY BY______
TO BE SIGNED BY______

JCG - tell [illegible] to which file this belongs

File in Book 6

C2-212 Cordell Hull Building

May 4, 1981

TNS, Inc.
P.O. Box 158
Jonesboro, Tennessee 37659

Attention: J.J. Hoynacki

Gentlemen:

As a result of the visit made on March 9 and 10, 1981 by Eddie Nanney, Johnny Graves and me the following comments, suggestions, and requirements are given. All of these topics were discussed with you before we departed your facility.

1. Amendments to your license must be obtained before a relocation or change in equipment and/or process is undertaken whenever such relocation or change will render information previously submitted to the Division invalid or obsolete.
2. Especially for those employees whose task is such that significant handling of the Uranium is required, ring badges are recommended unless TNS, Inc. prefers to expend the effort to make a determination of extremity exposures from wrist or body badge exposure data.
3. The structures having the air sampling devices should be constructed so as to provide less obstruction to air movement. Also, move pump exhaust so as to not discharge near the filters.
4. Install more air sampling stations and/or conduct studies of such detail of the meteorological conditions to insure that the air sampling program is adequate to determine any release of radioactive material.
5. From our observation of your environmental air sampling program serious questions could be raised as to whether data from such monitoring gives any reliable information concerning releases from your operations.
6. Establish a program to more fully utilize the wells that have been drilled to monitor leakage and/or other migration of radioactive material.
7. Establish a program, possibly in conjunction with item 6 above, for sampling of water in the environment including the adjacent stream and plant site discharge both process and runoff.

8. Conduct appropriate studies in all areas to seek ways of reducing or eliminating the use of respirators. The means of reducing the need for respirators shall include engineered safeguards including enclosures for operations, glove boxes, etc.

9. Consideration should be given to relocating and/or remodeling your decontamination site. It appeared to be one of the factors contributing to the movement of radioactive material contamination to areas outside of your restricted area.

In general, it appears that your first efforts should be directed toward conducting evaluations and studies to more fully understand your needs as they relate to a safe radioactive materials handling program. Efforts in the past and to date do not appear to answer the question of adequacy.

Please keep us informed of the actions you undertake regarding the above items.

Sincerely,

Charles P. West
Assistant Director
Division of Radiological Health

CPW/mw

6/4 ~~JCB~~:
6/4 ~~CRH~~
Bb cc
mailed
6-4

STATE OF TENNESSEE
DEPARTMENT OF PUBLIC HEALTH
CORDELL HULL BUILDING
NASHVILLE, TENNESSEE 37219

June 4, 1981

TNS, Inc.
P. O. Box 158
Old Highway 11-E
Jonesboro, Tennessee 37659

Attn: J. J. Hoynacki

Gentlemen:

After reviewing the data collected during the investigation into the allegations of the Oil, Chemical, and Atomic Workers Union conducted on May 5 and May 6, 1981, it appears that certain of your activities were not conducted in full compliance with "State Regulations for Protection Against Radiation" in that:

1. Process or engineering controls were not sufficient to limit concentrations of radioactive materials, contrary to "State Regulations for Protection Against Radiation", 1200-2-5-.05(3).

2. Company data indicate that intake of radioactive material by individuals in seven consecutive days exceeded that intake of radioactive material which would result from inhalation of such material for forty (40) hours at the uniform concentrations specified in Schedule RHS 8-1, Table I, Column1, contrary to "State Regulations for Protection Against Radiation", 1200-2-5-.05(4).

3. Licensed radioactive material was used in such a manner as to permit an individual in a restricted area to inhale a quantity in excess of the applicable limit during some calendar quarters, contrary to "State Regulations for Protection Against Radiation", 1200-2-5-.05(1).

4. The licensee failed to notify the Department in writing of exposure of individuals to radioactive material in excess of the applicable limits of 1200-2-5-.05(1), contrary to "State Regulations for Protection Against Radiation", 1200-2-5-.26.

It is requested that the Department be informed within 15 days of the action taken to correct these deficiencies and to prevent their recurrence.

Sincerely,

for
Stephen C. Brooks
Radiologist Physicist
Division of Radiological Health

SCB/dgw 4/8

Mr. **Gore**. The lack of a radiation safety program—and the company's own consultant found this after the strike—a lack of a radiation safety program—let me be careful in phrasing that. They found a lack of a commitment to radiation safety.

But here this shows up in the inspection reports both in 1979 and in 1980, and as I say, the other reports will be in the record. It seems to me that the lack of a radiation safety program in a plant where the employees are dealing with radioactive substances on a daily basis is a fairly serious charge. Now, you tell me if I'm wrong.

Mr. **Graham**. The last inspection we made at TNS, for which we made a complete evaluation, and have made a followup to see if the items of noncompliance were corrected, was the inspection of May 6 and 7.

Mr. **Gore**. Of 1981?

Mr. **Graham**. 1981.

Mr. **Gore**. Yes?

Mr. **Graham**. And on that inspection, there were four items, I believe, of noncompliance.

Mr. **Gore**. I see.

Mr. **Graham**. And the week of October 12, 1981, we made a followup inspection and certified that either the items had been complied with or they were no longer pertinent, and I say no longer pertinent because the penetrator shop where the employees were required to wear respirators has been discontinued.

Mr. **Gore**. Were you surprised to find that just a week after that May 1981 inspection the company's own consultant found this long list of problems, including a lack of management commitment to radiation safety programs, air samples five times the maximum permissible concentrations, many areas of noncompliance, a poorly documented, very sketchy program, et cetera, et cetera, et cetera. I won't read through the list again. How could the consultant for the company come in just a week after you all had been there and found such a horror story?

Mr. **Graham**. I don't know. We were not privy to that document.

Mr. **Gore**. You did try to get it, though, didn't you?

Mr. **Graham**. No.

Mr. **Gore**. No, you did not?

Mr. **Graham**. We were not aware of it.

Mr. **Gore**. Mr. Brown, you tried to get it, correct?

Mr. **Brown**. Yes, I did. Yes, sir.

Mr. **Gore**. OK. And you were not denied it, finally. You still have your hook in the water?

Mr. **Brown**. Right.

Mr. **Gore**. All right. Now, you were unable to issue fines, Mr. Graham. The only thing you could do is write letters, right?

Mr. **Graham**. Write letters, and, of course, we had the ultimate available to us of taking the company to court and amending their license.

Mr. **Gore**. But you could have impounded equipment, couldn't you, under State procedures?

Mr. **Graham**. No.

Mr. **Gore**. Let me read to you here from—this is from the NRC, and it may not—it is their Guide for Acceptable Practice, and that may be different from your authorizing statute, but the NRC'S

Guide for Acceptable Practice allows impounding of material in accordance with State administrative procedures.

Mr. **Graham**. I believe that's in our regulations, but we were informed by our attorney general that we didn't have the right to impound sources.

Mr. **Gore**. You can't impound material?

Mr. **Graham**. That's right.

Mr. **Gore**. Do you know why not?

Mr. **Graham**. Just a direction from the attorney general that we didn't have the right to do that.

Mr. **Gore**. All right. Would you supply for the record the legal opinion in question on that?

Mr. **Graham**. Yes, sir, I'll be glad to.

Mr. **Gore**. So, really, you're saying that you need the power to impose fines if you're going to do an effective job?

Mr. **Graham**. I think we've come to realize that now.

Mr. **Gore**. OK. Now, tell me why there's no time to ask for that between now and the 1982 legislative session which ends in the spring of next year?

Mr. **Graham**. We have a certain time to introduce legislation imposed by the Department. I suppose this was imposed by the legislature. And I don't know what the deadline is, but it's shortly after the legislature meets.

Mr. **Gore**. Oh, so it will be in the next couple of months?

Mr. **Graham**. Next month. This is December. It will be in January when they convene.

Mr. **Gore**. When do they come in?

Mr. **Graham**. In January.

Mr. **Gore**. Early January?

Mr. **Graham**. Right.

Mr. **Gore**. I see. And do you know when their deadline may be in January or February?

Mr. **Graham**. This is a short session this year.

Mr. **Gore**. OK.

Mr. **Graham**. On alternate years, it is a short session, and this is the short session year.

Mr. **Gore**. So your inclination is to wait another year?

Mr. **Graham**. Because of the complexity of the legislation, which will require a hearing board and many other complexities, our Department does not have time to prepare the legislation.

Mr. **Gore**. No time to prepare it?

Mr. **Graham**. Yes, sir.

Mr. **Gore**. I was reading the press release from TNS about this whole matter, or rather a TNS position paper, and they are citing as a defense that the Bureau of Radiological Health conducted inspections and, quote, "There were no fines or penalties," end quote. Really, there couldn't have been any fines or penalties; could there have been?

Mr. **Graham**. That's right.

Mr. **Gore**. Well, they make that sound like you gave them a clean bill of health.

They go on here and say that TOSHA's Chief of Health Compliance reported that noise was the only violation of a serious nature.

Mr. **Taylor**. Again, you're talking about semantics.

Mr. **Gore**. Yes.

Mr. **Taylor**. If you wanted us to cite them serious, we could have extracted $500 more from them. I don't think that would have brought TNS to its knees.

Mr. **Gore**. Well, it might have made it impossible for them to brag to the public and tell the union that there was nothing serious going on there.

Let me read on, quote: "He also said that TNS has no history of TOSHA violations." Well, of course, there wouldn't be a history of TOSHA violations with no inspections.

Mr. **Taylor**. I don't know if they're talking about safety inspections or safety and health inspections. We've already testified that the health inspection resulted in three citations and violations, and they did abate those.

Mr. **Gore**. The company is able to posture as a responsible member of the community, hiding behind what they label as a bill of clean health which you all, they say, have given them, and as a result the employees there had to take matters into their own hands.

Now, the majority of the people in this country believe that health and safety concerns should be observed in the workplace, and they believe that government, at some level, has a responsibility to do that. Now, in this case, the Federal Government has delegated responsibility to you gentlemen, but you have given the company what they regard as a bill of clean health, but it doesn't appear to jive with the consultant's report that the company paid for. So you see the problem?

Mr. **Taylor**. Yes, sir.

Mr. **Gore**. I don't want to be unfair, and I don't want to appear unfair, so you tell me where I'm going wrong, if you believe I am.

Mr. **Graham**. Mr. Chairman, we have a set of regulations containing standards, and in our inspections we check against our regulations, against standards, and against license conditions, and whenever we find a violation of our regulations, we cite the licensee, and we expect a response from the licensee indicating what he has done to correct those violations. And we have done that, and we've received a response to our letters of citations and in that extent, to that extent only, this was not—our last inspection was not a complete inspection. In a company of that size it's difficult to, in the course of a week's time with one inspector, do a complete inspection.

Mr. **Gore**. Now—go ahead.

Mr. **Graham**. Pardon me, sir.

Mr. **Gore**. No, go ahead.

Mr. **Graham**. But what we found during that last inspection, we cited, and the company assured us that they had corrected this, and we confirmed this during our last inspection, which we haven't completely analyzed. We expect to very shortly.

Mr. **Gore**. Without objection, the TNS document that I referred to, the TNS position paper, will be included in full in the record at this point.

[The following material was received for the record.]

TO: R. L. SALEY's Office
Attention: SONJA;
Aerojet Ordnance Company
Washington, DC

September 30, 1981

Four pages - TELECOPY

TNS Position Paper

I. MANAGEMENT CONTROL KEY ISSUE IN STRIKE

We are convinced that the fundamental issue at the TNS plant is not Health and Safety as alleged by the Union, but the Union's unsuccessful attempt to dictate how the Company is managed.

The health/safety issue became a major issue during the labor negotiations after the Company exhibited its firmness in retaining its management rights.

The Union demanded a complete deletion of the Management Rights provision in the labor agreement. Additionally, the Union wanted to take away the Company's capability to operate the plant in many vital areas, such as establishing work assignments, laying off employees when there is no work, making temporary work assignments, establishing new job classifications, and using subcontractors.

II. TNS IS A SAFE PLACE TO WORK

State of Tennessee inspections show this.

In response to the Union's allegation (April 29, 1981) that there is "imminent danger at the plant," the Tennessee Department of Public Health made a two-day inspection (May 5-6, 1981) and found no concerns of a serious nature. There were no fines nor penalties. The letter the State sent to the Union said, in part:

"Some employees have been 'relocated' because urine sample results exceeded the 'action levels' established by the Company and, in accordance with Company procedure, relocation is required. These 'action levels' appear to be in line with those utilized at other facilities within the industry. The 'action levels' also appear to have been set at values below those levels at which hazards to employees have been shown to exist."

Further, a radiological health physicist with the State Department of Public Health said the levels were not serious. "I don't want to minimize what happened," he said, "but these are not instances of serious exposure. They certainly aren't the critical sort of violations that require immediate corrective action."

TNS has instituted corrective measures to resolve these problems.

The Tennessee Occupational Safety and Health Administration (TOSHA) made inspections of TNS in its regular visits earlier this year (in January and March) and found that on occasion employees had been exposed to dust in an amount above what would be acceptable had they not been wearing respirators. There was also an instance of excessive noise. TOSHA levied a $520 fine against TNS for the noise violation, and no fines nor punishment were made for the others. Corrective action concerning dust in the plant air, which actually began prior to the issuance of the citation, is to be completed by December 7.

TOSHA's chief of health compliance reported the excessive noise was the only violation of a serious nature, and said, "None of the workers were exposed to radiation. We're talking about inhalation of dust particles, something that could have been serious if the workers were not wearing respirators. But they were."

He also said that TNS has/no history of TOSHA violations.

III. TNS POSES NO HEALTH THREAT TO THE COMMUNITY

Perimeter air samples typically show concentrations of airborne uranium of only about 1/500th of the specified permissible concentrations for plant discharge.

Numerous tests have been made on the stream water, both upstream and downstream of the waste water holding pond. Chemical analysis of the stream water indicated in both cases the levels are well within stream quality limits.

To ensure that TNS does not introduce any potentially harmful waste into the nearby creek through future-expanded operations, the Company has applied for a license for a new liquid waste treatment system. TNS has awarded a contract for engineering and construction of the waste treatment facility, which will be large enough to process our entire 24-hour liquid effluent in eight hours, with construction awaiting state approval.

IV. TNS HAS AN EFFECTIVE HEALTH/SAFETY PROGRAM FOR ITS EMPLOYEES

TNS employees are protected from unacceptable levels of radiation and inhalation of airborne contamination through a number of monitoring devices and precautions.

Workers wear radiation dosimeters which are carefully monitored. Each production worker submits a urine sample for analysis every two weeks, and all other Company employees have a urinalysis once a month. Special filtering and monitoring equipment is used to prevent inhalation of particles from the cutting and grinding of metal. Twice annually, employees undergo a very sensitive examination to determine if any contamination has been retained in the lungs. Production employees are required to wear gloves, change clothes and shoes before leaving the production area, take showers at the end of each shift and are not allowed to smoke, eat or drink in the production area.

(Urine samples are now taken on Monday mornings rather than during the week, as had been done previously, because of recent Federal guidance. The government says samples taken after the employee has been away from work for at least 48 hours are more indicative of actual deposits in the kidney than those taken during the work week.)

TNS supplements its own health/safety department with assistance from outside consultants and specialists from the parent Company.

TNS is continually applying the latest technology to upgrade its overall health/safety program.

V. THE REAL PROBLEM

We believe there is a serious health and safety problem near TNS that greatly concerns us. There has been a continuing history of violent actions occasioned by the strike. For example, seven strikers have been arrested or jailed for violence. Homes of employees have been blasted with shotgun pellets. Electric transformers and a newspaper window were shot out. The plant has been shot at and a security guard was hit.

We were told by the Union--long before Health and Safety became an issue--that the plant would be operated the Union way or we would be run out of Tennessee.

Mr. **Gore**. Mr. Graham, there was a period of 5 years, from September 1974 until September 1979, when there were no inspections at all by the State bureau of radiological health; is that correct?

Mr. **Graham**. No, there were inspections, Mr. Chairman. We had an inspector in the Knoxville office who performed these inspections, and we had difficulty in obtaining an inspection report from him. We subsequently retired the man on threat of being fired.

Mr. **Gore**. Well, now, I have a document from your own office, Mr. Graham, that says a visit was made to TNS by Johnny Graves, Lewis Barber, and me—who is the me in this? We'll supply it for the record, one of your employees—on September 20 and 21, 1979, to conduct a routine reinspection of the activities under the law. The last inspection of this facility was made on September 24, 1974. That would indicate that——

Mr. **Graham**. The last documented inspection.

Mr. **Gore**. OK. OK, all right. And you're saying that in that 5-year period there were undocumented inspections that took place?

Mr. **Graham**. Yes, sir.

Mr. **Gore**. OK. Oh, I'm sorry, the person who was the author of this was Sally Hock, the person we talked about earlier.

Mr. Kerr, the NRC accompanied the State bureau on one inspection in November 1980, and the person who accompanied Sally Hock and Mr. Graves was E. C. Ashley, and he reported back, quote, "According to the new organization chart, it looks as if radiation safety is lower in the chain than before. The State was not notified of these major management and organizational changes. Schell stated that the VP for operations has management responsibility over radiation safety. J. Barlow is overall supervisor," et cetera. S. Hock is the RSO. What is RSO?

Mr. **Kerr**. Radiation safety officer.

Mr. **Gore**. Radiation safety officer. I guess at this point, she had gone to the company:

> Graves noted there is no health physics coverage on the night shift. Some of the higher air samples occur at these times. The licensee stated that they are looking into this matter.

Well, now, if the NRC finds that there is no health physics coverage on the night shift when some of the higher air samples are occurring, and finds that the company is deemphasizing radiation safety at a time when there are problems, what can it do to get the State program to deal with that?

Mr. **Kerr**. Well, I don't remember that the enforcement letter specifically addressed all the details you read out of that summary.

Mr. **Gore**. Well, let me ask the staff to give that to you.

Mr. **Kerr**. Oh, I have that.

Mr. **Gore**. This is from the Tennessee files.

Mr. **Kerr**. I have the thing you read.

Mr. **Gore**. Oh, OK. All right, fine.

Mr. **Kerr**. I'm saying I'm not sure that the State enforcement letter that resulted from that accompaniment addressed in all of quite the same detail those items, but I remember that the State enforcement letter addresses problems with their air sampling program, problems with their survey program, problems with the personnel monitoring programs.

The point of this was to tell us the kinds of things that the State was finding. We did not disagree with what the State found, and I think in terms of the health physics coverage it probably would not be expected that it be continuous all the time on all those shifts, but sufficient information should be available to verify that there is not a significant problem.

Mr. **Gore**. Well, OK.

Mr. Brown, what do you think ought to be the normal acceptable interval between health inspections at a plant like TNS?

Mr. **Brown**. The guidelines that Mr. Taylor gave to you are pretty much spelled out by the benchmark committee, and about 2 to 4 years, I believe, is the frequency that is indicated by that.

Mr. **Gore**. OK; 1 and 7½ years would be unreasonable, but again this is in the early startup period, so maybe that's a special——

Mr. **Brown**. He's saying from now on he'll be back there every 2 to 4 years.

Mr. **Gore**. All right.

Do you have questions?

Mr. Clement, Minority counsel.

Mr. **Clement**. Thank you, Mr. Chairman.

Mr. Graham, do you have the same authority that Mr. Taylor does? Can you go in and inspect upon complaint from an employee at a plant?

Mr. **Graham**. Yes, I think you will find, in examining the material that was submitted to the committee, that we responded to two complaints from the company, one an anonymous complaint, and one signed by the union.

Mr. **Clement**. When were those complaints filed?

Mr. **Graham**. The one that was signed was filed on April 29, 1981, and we were in the plant on May 5——

Mr. **Clement**. April 29 was the day before they went on strike; is that not right? I believe the record will show that.

Mr. **Graham**. All right.

Mr. **Clement**. And the other one was?

Mr. **Graham**. Was prior to that, the anonymous complaint, and we went into the plant a few days afterward.

We consider complaints of very high priority.

Mr. **Clement**. How much longer before April 29 had you received an anonymous complaint?

Mr. **Graham**. I'll have to check my records. I don't recall, but it was about a couple of months, I believe, as I recall.

Mr. **Clement**. And those were the only complaints that you've ever received on this plant?

Mr. **Graham**. Yes.

Mr. **Clement**. Do you happen to know whether or not you've received complaints from other plants that would be represented by the same union within the State?

Mr. **Graham**. I have no knowledge of any.

Mr. **Clement**. You have no knowledge.

Mr. **Graham**. As far as I know, this particular union does not represent any other plants, to my knowledge.

Mr. **Clement**. Mr. Taylor, you stated, I believe, that you had not received previous complaints about health and safety violations at the TNS plant; is that correct?

Mr. **Taylor**. That's correct.

Mr. **Clement**. And you've received two since then, or since——

Mr. **Taylor**. No.

Mr. **Clement**. You've never received any?

Mr. **Taylor**. We've never received a complaint. The Federal OSHA people did.

Mr. **Clement**. All right.

And, Mr. Brown, your testimony was that you had received two, but both of those came after May 1 of this year?

Mr. **Brown**. Right.

Mr. **Clement**. All right. And, as a matter of fact I believe, Mr. Brown, your testimony was that one of those complaints was an attempt to get employee medical records, which was quickly resolved by the release of those records, is that not correct?

Mr. **Brown**. This is correct.

Mr. **Clement**. The second one concerned release of the Radiation Management Corp. report?

Mr. **Brown**. Yes, sir.

Mr. **Clement**. And the basis for that complaint was that the report was claimed to contain results or analysis of employees' exposure records?

Mr. **Brown**. Right.

Mr. **Clement**. Have you had a chance to look at that report yet?

Mr. **Brown**. No, sir. I only received it——

Mr. **Clement**. Well, it's not part of a public record, Mr. Brown, and I think you may find that it does not contain results or analysis of employee exposure records.

Have you received any other complaints on the TNS plant?

Mr. **Brown**. No, sir, we have not.

Mr. **Clement**. Let me ask you, Mr. Kerr, has NRC received any complaints?

Mr. **Kerr**. No, sir, none that I'm aware of.

Mr. **Clement**. Mr. Kerr, a final question: I believe you've been in the audience most of the day, and you've heard most of the testimony.

Mr. **Kerr**. Yes, sir.

Mr. **Clement**. Is it reasonable to believe, after having heard all of the testimony, that the licensee, in this case TNS, was probably technically within the bounds of the applicable regulations in the operation of this plant?

Mr. **Kerr**. No, I think there were very definitely violations, and when our staff member, Mr. Ashley, accompanied their staff in November, 1980, and they cited 13 or 15 items of noncompliance, I don't think he disagreed with those citations, and I think he agreed that they need to improve their health physics and procedures and training programs. We do not disagree with that. We think the State Radiological Health program focused on the right items.

Mr. **Clement**. How would you characterize the health and safety program in this plant, within the average of the industry as a whole?

Mr. **Kerr**. Well, the industry, as near as I can tell, is not very large in terms of the number of people that do things similar to this. I believe there are about six companies, and they may not all do exactly what TNS does. But under NRC jurisdiction, we have—

there's a company, Remington Arms in Missouri, and Honeywell in Minnesota, and our last inspections of those found no violations.

On the other hand, Nuclear Metals, Inc., in Concord, Mass., was inspected last week, and they have one very high possible overexposure in the urine. This is still being investigated.

The TNS parent company, Aerojet, has been shut down twice temporarily by the State of California, which is an agreement State, by the way. They were shut down in 1977 for a short period of time because of contamination in unrestricted areas; that is, areas that are open to the general public. And, second, in 1979 they were temporarily suspended because of shipping practices that resulted in a fire on a waste truck at the Beatty, Nev., site, which was the subject of some publicity.

And one other company that we are aware of that does some similar, R.M.I., Inc., in Ashtabula, Ohio, NRC was doing some special inspections as a result of complaints there in March and August of this year. No items of noncompliance, but a small amount of contamination of the soil. A previous inspection in January 1980 had four items of noncompliance, one related to calibration of survey instruments, one related to a lack of weekly air samples being taken, one they were required to do annual in-vivo counting, that is, lung counting, and four people had not been done, and the other citation, out of six air samples being required, only five were present.

So I think if you count numbers, if those are what is important, there have been more violations in the case of TNS, but it's not to say that violations have not occurred elsewhere.

Mr. **Clement**. I have no further questions, Mr. Chairman.

Mr. **Gore**. Thank you very much.

This consultant's report, prepared after the strike took place, appears to have found a number of serious matters, certainly a lack of management commitment to radiation safety is, air samples five times the maximum permissible concentrations, lack of monitoring for beta emissions, five areas with excess uranium concentrations, inadequate policy governing respirators, inadequate medical surveillance for use of respirators, lack of an adequate training program, inadequate fitting, use, cleaning, storage, inspection, quality assurance and maintenance of equipment, asking of employees too much to expect, inadequate method for determining the surface dose rate from the metal, no personnel contamination monitor in the changing area, an effluent sample five times higher than the allowable release concentrations, unsatisfactory method of measuring the dose to hands and fingers of the people required to directly handle the metal, very sketchy, poorly documented training program, survey meters that weren't calibrated, violations of the license in the use of protective clothing and respirators, no one given clear responsibility to see that the plans were adhered to, poorly designed ventilation system, no dampers to control the blower flow, leaks in the duct work. That doesn't sound like this system works very well.

If all this was found a week after an inspection and years after repeated inspections and reports being filed about this plant, it tells me that the system we now have operating just isn't working.

Mr. **Graham**. Mr. Chairman, may I comment on two of those allegations there?

Mr. **Gore**. Yes.

Mr. **Graham**. One, the allegation that the company was not monitoring for beta exposure.

Mr. **Gore**. Yes?

Mr. **Graham**. Our inspections indicate that they do monitor for beta exposures, along with gamma.

And the second allegation has to do with——

Mr. **Gore**. This was in—go ahead, excuse me.

Mr. **Graham**. The second allegation was that there was a radioactive release to unrestricted areas in excess of the regulation. This would be impossible to determine on one sample, since the company is allowed to average samples over a period of a year, and the average is not to exceed the regulation. So this is impossible to determine with a single sample.

Mr. **Gore**. It said a sample.

Mr. **Graham**. Right, a sample.

Mr. **Gore**. It said a sample.

Mr. **Graham**. They were there one day, as I understand it.

Mr. **Gore**. They were there one day, and perhaps coincidentally the sample they took was five times above what would be allowed on an average basis.

Mr. **Graham**. Right. But you need to take samples throughout the year in order to determine whether they were actually releasing material in excess of the standards.

Mr. **Gore**. What about the union's charges that the company knew every time you all were coming for an inspection?

Mr. **Graham**. I don't believe they made that allegation with respect to Tennessee Department of Public Health.

Mr. **Gore**. Oh, they did, too. They did. They've made that allegation repeatedly. Yes, they have. And he just—Mr. Bettis sat right there in the chair Mr. West is occupying and said precisely that.

Mr. **Graham**. All I can tell you, Mr. Chairman, is that our inspections are made on a confidential basis. We give no prior notification.

Mr. **Gore**. Well, as I said before, I'm most anxious not to be unfair, and I want you to tell me if I'm being unfair, but I look at this report, paid for by the company, done by an outside, independent expert that they chose, and the expert came in at the end of a long period of time when the agencies represented here were inspecting this facility, and found this long list of problems. At the time, the employees were out on strike trying to get some action on health and safety, and it gives me a problem to see the people from each of the agencies responsible for doing that job, in the face of this kind of a report, continue to maintain that everything is working fine. You've got these people at each other's throats up there.

Mr. **Taylor**. Mr. Chairman——

Mr. **Gore**. And you've got an independent consultant seeming to confirm what the union was saying.

Mr. Taylor?

Mr. **Taylor**. If I'm not mistaken, the consultant's analysis of the dust levels was made prior to the time that our followup inspection was made, at which time we found that the standard was in compliance.

Mr. **Gore**. Well, that's right, but your followup inspection didn't come until——

Mr. **Taylor**. It came in October.

Mr. **Gore** [continuing]. Six months later, a year after the first inspection.

Mr. **Taylor**. I'm pointing out that the situation has improved since the time that consultant made his, and since the time we made our initial one, which indicated in one work station 13 times excessive dust limits.

Mr. **Gore**. Well, is it your position that so long as everything is cleaned up in the future, everything is all right?

Mr. **Taylor**. It's my position that if we can find noncompliance to the standard that we can enforce it.

Mr. **Gore**. What?

Mr. **Taylor**. It's my position that if we can detect noncompliance with a standard, we can enforce our standard and gain compliance, and that's what we did.

Mr. **Gore**. Do you agree with me that the people who had to go out on strike have suffered an injustice? That may be an unfair question to ask someone in your position.

Mr. **Taylor**. I think it is unfair to ask someone in my position.

Mr. **Gore**. All right, I'll withdraw the question, then. No, it occurred to me that that might put you in a difficult situation.

Well, I conclude that the system really is not working, and that the agreement State mechanism is not working.

Mr. Kerr, do you think at a minimum, States ought to have the ability to impose fines, or do you think that writing letters is sufficient?

Mr. **Kerr**. Well, Mr. Chairman, I think there are seven agreement States which have the authority to impose civil penalties. Therefore, out of the 26 agreement States, there are 19 that do not.

Mr. **Gore**. Yes.

Mr. **Kerr**. And we have found that some of them are very capable of carrying out an effective program without civil penalty. Notwithstanding that, I certainly recommend it.

We have prepared model legislation that the States can use as guidance. I testified in the Arizona case which you referred to earlier before a State senate committee, and recommended that they consider it seriously. The purpose of civil penalties is just another tool in an escalated enforcement procedure, and the purpose is to make it more expensive for a licensee to be in noncompliance than it is to comply, and so we do recommend it.

Mr. **Gore**. OK. Well, that model legislation might make it possible to come up with something before 1983, Mr. Graham. It's a possibility, isn't it?

Mr. **Graham**. I think so.

Mr. **Gore**. OK. I want to thank all of you, particularly my fellow Tennesseans, for being here today. I'm quite sincere in my statement that I just don't believe the system is working the way it should, and I think these people who had to go out on strike have suffered a tremendous injustice, and I hope we can get this system working well so similar events won't occur in the future.

But with that, thanks to you and to all of the witnesses who have helped us today, and the hearing is adjourned.

[Whereupon, at 4:30 p.m., the hearing was adjourned.]

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